United States Department of Agriculture

Natural Resources Conservation Service

In cooperation with the Alabama Agricultural Experiment Station and the Alabama Soil and Water Conservation Committee

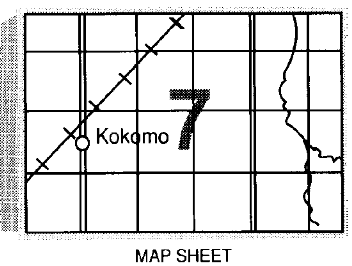
Soil Survey of Pickens County, Alabama

How to Use This Soil Survey

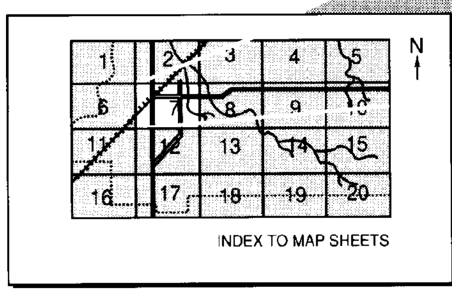
General Soil Map

The general soil map, which is the color map preceding the detailed soil maps, shows the survey area divided into groups of associated soils called general soil map units. This map is useful in planning the use and management of large areas.

To find information about your area of interest, locate that area on the map, identify the name of the map unit in the area on the color-coded map legend, then refer to the section **General Soil Map Units** for a general description of the soils in your area.

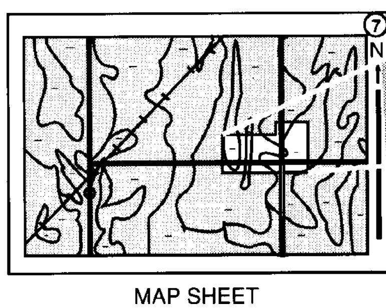


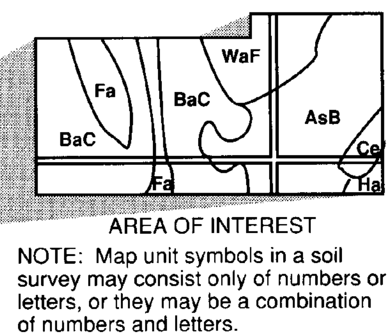
Detailed Soil Maps



The detailed soil maps follow the general soil map. These maps can be useful in planning the use and management of small areas.

To find information about your area of interest, locate that area on the **Index to Map Sheets**, which precedes the soil maps. Note the number of the map sheet and turn to that sheet.





Locate your area of interest on the map sheet. Note the map units symbols that are in that area. Turn to the **Contents**, which lists the map units by symbol and name and shows the page where each map unit is described.

The **Contents** shows which table has data on a specific land use for each detailed soil map unit. Also see the **Contents** for sections of this publication that may address your specific needs.

This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (formerly the Soil Conservation Service) has leadership for the Federal part of the National Cooperative Soil Survey.

Major fieldwork for this soil survey was completed in 1997. Soil names and descriptions were approved in 1997. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1994. This survey was made cooperatively by the Natural Resources Conservation Service and the Alabama Agricultural Experiment Station; the Alabama Cooperative Extension System; the Alabama Soil and Water Conservation Committee; and the Alabama Department of Agriculture and Industries. The survey is part of the technical assistance furnished to the Pickens County Soil and Water Conservation District.

Cover: Contour buffer strips in an area of Okolona silty clay, 1 to 3 percent slopes. Conservation practices, such as these buffer strips, help to control erosion.

Additional information about the Nation's natural resources is available on the Natural Resources Conservation Service home page on the World Wide Web. The address is http://www.nrcs.usda.gov (click on "Technical Resources").

Contents

Issued 2002

Foreword

This soil survey contains information that affects land use planning in this survey area. It contains predictions of soil behavior for selected land uses. The survey also highlights soil limitations, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

This soil survey is designed for many different users. Farmers, ranchers, foresters, and agronomists can use it to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the survey to plan land use, select sites for construction, and identify special practices needed to ensure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the survey to help them understand, protect, and enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. The information in this report is intended to identify soil properties that are used in making various land use or land treatment decisions. Statements made in this report are intended to help the land users identify and reduce the effects of soil limitations that affect various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are shallow to bedrock. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

These and many other soil properties that affect land use are described in this soil survey. Broad areas of soils are shown on the general soil map. The location of each soil is shown on the detailed soil maps. Each soil in the survey area is described. Information on specific uses is given for each soil. Help in using this publication and additional information are available at the local office of the Natural Resources Conservation Service or the Cooperative Extension System.

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Soil Survey of
Pickens County, Alabama

By Milton Tuck, Natural Resources Conservation Service

Fieldwork by Milton Tuck, Roland J. Perry, and Ralph M. Thornton, Natural Resources Conservation Service

United States Department of Agriculture, Natural Resources Conservation Service, in cooperation with
the Alabama Agricultural Experiment Station, the Alabama Cooperative Extension System, the Alabama Soil and Water Conservation Committee, and the Alabama Department of Agriculture and Industries

Pickens County is in the west-central part of Alabama (fig. 1). It is bordered on the north by Lamar and Fayette Counties, on the east by Tuscaloosa County, and on the south by Greene and Sumter Counties. It is bordered on the west by Lowndes and Noxubee Counties, Mississippi. Carrollton, the county seat, is near the center of the county. It is about 140 miles northwest of Montgomery. The total area of the county is 569,780 acres, or about 890 square miles. About 563,370 acres of this total consists of land areas and small areas of water. About 6,410 acres consists of large areas of water in the form of lakes and rivers.

Pickens County is mostly rural, and it had a population of 20,958 in 1994 *(20)*. The largest communities in the county are Carrollton, Aliceville, Gordo, Pickensville, and Reform.

Most of the acreage in the county is used as woodland; however, a significant acreage is used for cultivated crops, pasture, and hay.

Pickens County is comprised of four distinct physiographic regions—the Blackland Prairie, the Coastal Plain uplands, low terraces and flood plains, and high terraces. Elevation ranges from about 120 feet above sea level in the southern part of the county to about 580 feet in the northern part.

The Blackland Prairie makes up about 33,000 acres in the southwestern part of the county. It is used mostly for pasture, hay, and cultivated crops. The landscape is mostly nearly level to moderately sloping and has little relief. The soils range from moderately deep to very deep, formed in materials weathered from soft limestone (chalk) and clayey sediments, and are dominantly clayey. They range from very strongly acid to moderately alkaline and from well drained to somewhat poorly drained.

The Coastal Plain uplands make up about 330,000 acres in the county, mostly east and north of the Tombigbee River. Most areas are used for woodland. A small acreage is used for pasture, hay, cultivated crops, and homesites. The landscape is dominantly hilly and has deeply incised streams and narrow flood plains. The soils generally are very deep, formed in unconsolidated loamy and clayey sediments, and range from loamy to clayey. They are acid and generally are well drained or moderately well drained.

The low terraces make up about 35,000 acres in the county, and the associated flood plains make up about 115,000 acres. This physiographic region is mostly along the Tombigbee and Sipsey Rivers and the major tributaries to these rivers. Many areas on the terraces are used for cultivated crops, pasture, or hay, and a significant acreage is used for woodland. Most areas on the flood plains are hardwood forests. The landscape in this physiographic region consists of low, nearly level and gently undulating terraces and nearly level flood plains that have little relief. The soils are very deep; formed in loamy, sandy, and clayey alluvium; and range from sandy to clayey. They are acid and range from excessively drained to poorly drained. Most areas are subject to flooding.

The high terraces make up about 50,000 acres in

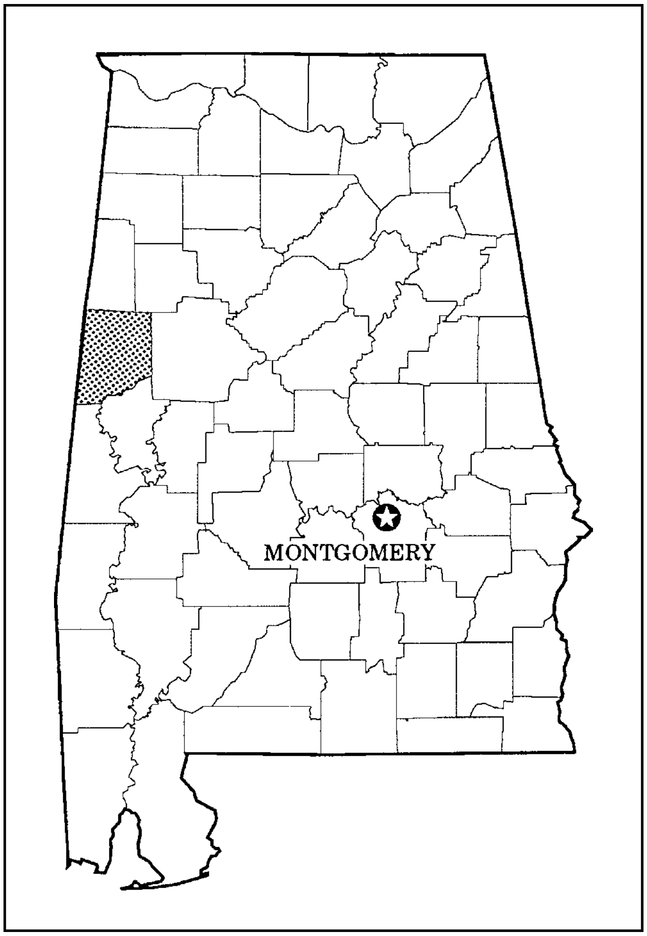

Figure 1.—Location of Pickens County in Alabama.

the county, mostly along the Tombigbee River and its major tributaries. Most areas are used for cultivated crops, pasture, hay, or homesites. The landscape consists of broad, nearly level to gently sloping ridgetops and plateaus and strongly sloping and moderately steep side slopes. The soils are very deep, formed in stratified loamy to clayey sediments, and are loamy. They are acid and generally are well drained or moderately well drained.

This soil survey updates an earlier survey of Pickens County published in 1917 *(10)*. It provides additional information and larger maps, which show the soils in greater detail.

General Nature of the County

This section gives general information about the county. It describes climate, early history, agriculture, transportation facilities, water resources, and mineral resources.

Climate

Pickens County has long, hot summers because moist tropical air from the Gulf of Mexico persistently covers the area. Winters are cool and fairly short. A rare cold wave lingers for 1 or 2 days. Precipitation is fairly heavy throughout the year, and prolonged droughts are rare. Summer precipitation, mainly in the form of afternoon thunderstorms, is adequate for the growth of all locally grown crops in most years.

Severe local storms, including tornadoes, strike occasionally in or near the county. They are short in duration and cause variable and spotty damage. Every few years in summer or fall, a tropical depression or a remnant of a hurricane that has moved inland causes extremely heavy rains for 1 to 3 days.

Table 1 gives data on temperature and precipitation for the survey area as recorded at Aliceville in the period 1961 to 1987. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on length of the growing season.

In winter, the average temperature is 44 degrees F and the average daily minimum temperature is 32 degrees. The lowest temperature on record, which occurred at Aliceville on January 1, 1964, is -2 degrees. In summer, the average temperature is 79 degrees and the average daily maximum temperature is 91 degrees. The highest recorded temperature, which occurred on July 17, 1980, is 108 degrees.

Growing degree days are shown in table 1. They are equivalent to “heat units.” During the month, growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (50 degrees F). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

The total annual precipitation is about 54 inches. Of this, 28 inches, or 51 percent, usually falls in April through October. The growing season for most crops falls within this period. In 2 years out of 10, the rainfall in April through October is less than 12 inches. The heaviest 1-day rainfall during the period of record was 8.6 inches on April 13, 1979. Thunderstorms occur on about 60 days each year, and most occur in summer.

The average seasonal snowfall is about 0.9 inch. The greatest snow depth at any one time during the period of record was 10 inches. On the average, less than one day of the year has at least 1 inch of snow on the ground. The number of such days varies greatly from year to year.

The average relative humidity in midafternoon is about 56 percent. Humidity is higher at night, and the average at dawn is about 86 percent. The sun shines

71 percent of the time possible in summer and 55 percent in winter. The prevailing wind is from the south. Average windspeed is highest, 8.1 miles per hour, in March.

Early History

Pickens County was created by an act of the Alabama legislature on December 19, 1820, from parts of Tuscaloosa County. It was named in honor of Isreal Pickens, who later became Governor of Alabama.

Archeological evidence indicates that the area was occupied by Native Americans in both prehistoric and historic periods and that the inhabitants of the early Native American towns had substantial communications with the first Europeans that came to the area. The Chickasaw tribe was the principal Native American tribe in the county during historic times. Along with the Cherokee, Creek, and Choctaw tribes, they held land in the county until 1838. The tribes ceded their land to the United States in 1838 and were relocated to western reservations *(6)*.

By the end of the Creek Wars in 1814, European immigrants had begun to replace the Native Americans in communities along the Tombigbee River. Early settlers came mostly from South Carolina, North Carolina, Georgia, Virginia, and Tennessee. In 1817, they established their first settlement near the site that is currently occupied by the town of Pickensville. Early occupations included raising livestock, farming, and logging *(10)*.

Agriculture

Agriculture has always been an important part of the economy of Pickens County. Early agricultural activities included producing subsistence crops, mainly corn, wheat, and oats; raising hogs and cattle; and growing vegetables, tobacco, and indigo. Cotton became the main cash crop and was grown on many of the well drained sites in the county. The production of cotton increased until restricted by the appearance of the cotton boll weevil in about 1914. In 1900, approximately 65,700 acres was planted to cotton *(10)*. This acreage had decreased to about 5,244 acres by 1992 *(1)*.

The arrival of the cotton boll weevil had an important effect on agriculture. The decrease in production resulting from the insect was so severe that farmers were forced to diversify their crops. The acreage of other crops, such as corn, sweet potatoes, peanuts, hay, and pasture plants, greatly increased. The sale of dairy products also greatly increased. Currently, the main cultivated crops are cotton, corn, soybeans, and wheat.

In recent years, the acreage used for cultivated crops has gradually decreased and the acreage used for pasture and pine woodland has increased. About 83 percent of the land in the county is used for woodland, 4 percent is used for pasture and hayland, and 5 percent is used for cultivated crops *(1, 15)*. Economically important agricultural enterprises in the county include the production of poultry, mainly broilers; the raising of hogs and beef and dairy cattle; and the production of timber and associated products. The number of poultry producers is increasing steadily.

Transportation Facilities

The major highways in the county include U.S. Highway 82, which runs east and west through Gordo and Reform in the northern part of the county; Alabama Highway 14, which runs southeast and northwest through Aliceville and Pickensville in the southern part; Alabama Highway 17, which runs north and south through Reform, Carrollton, and Aliceville; and Alabama Highway 86, which runs east and west through Carrollton in the central part of the county. Numerous other hard- and gravel-surfaced county roads provide access throughout the county.

The county is served by two railroads, which provide freight service to Reform and Gordo in the northern part of the county and to Aliceville and Pickensville in the southern part. Daily passenger and parcel service is provided by major bus services. Municipal airports near Aliceville and Reform serve small, private and commercial aircraft. The Tombigbee River is navigable its entire length through the county and provides access to the Gulf of Mexico and the Tennessee River.

Water Resources

Pickens County has a large amount of surface water suitable for domestic and recreational uses. The Tombigbee River, which flows through the southwestern part of the county, is the largest potential source of surface water. Other potential large surface-water supplies are the Sipsey River, Bear Creek, Coal Fire Creek, and Lubbub Creek. Aliceville Lake and Gainesville Lake are large and are formed by dams on the Tombigbee River. They provide water for irrigation and opportunities for boating, fishing, and hunting. Numerous small lakes and ponds provide water for livestock and recreational uses.

Ground water is the source of most of the water for domestic and industrial uses in Pickens County. Two aquifers, the Gordo and McShan Formations, supply

most of the ground water used in the county. A third aquifer, the Coker Formation, is potentially a large source of ground water. It is not, however, extensively developed because of its depth and the availability of water from the shallower aquifers. Adequate water for livestock and domestic uses generally can be produced from the Eutaw Formation, terrace deposits, and alluvium. The ground water in the county generally is of good quality, except for a high content of iron in some areas *(21)*.

Mineral Resources

Economically important minerals in Pickens County include clay, sand, gravel, and soft limestone (chalk). Clay is abundant throughout the county. It can be used in blends for ceramic products, as an absorbent for grease, or as a carrier for fertilizer. It is generally not suitable as the main ingredient for ceramic products because of its plasticity. Terrace and alluvial deposits of sand and gravel are in the western and southern parts of the county in areas adjacent to the Tombigbee and Sipsey Rivers and other major streams. Limestone that has potential value for agricultural use is in the southwestern part of the county *(22)*.

How This Survey Was Made

This survey was made to provide information about the soils and miscellaneous areas in the survey area. The information includes a description of the soils and miscellaneous areas and their location and a discussion of their suitability, limitations, and management for specified uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They dug many holes to study the soil profile, which is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

The soils and miscellaneous areas in the survey area are in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept or model of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only

on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

The descriptions, names, and delineations of the soils in this survey area do not fully agree with those of the soils in adjacent survey areas. Differences are the result of a better knowledge of soils, modifications in series concepts, or variations in the intensity of mapping or in the extent of the soils in the survey areas.

Survey Procedures

The general procedures followed in making this survey are described in the National Soil Survey Handbook of the Natural Resources Conservation Service *(19)*. The soil survey of Pickens County, published in 1917, and the “Geologic map of Pickens County, Alabama, map 40” *(10, 22)* were among the references used.

Before the field work began, preliminary boundaries of landforms were plotted stereoscopically on high altitude aerial photographs. United States Geological Survey topographic maps and aerial photographs were studied to relate land and image features.

Traverses were made on foot and by vehicle, at variable intervals, depending on the complexity of the soil landscape and geology. Soil examinations along the traverses were made at various intervals, depending on the landscape and soil pattern *(9, 11)*. Observations of landforms, uprooted trees, vegetation, roadbanks, and animal burrows were made continuously without regard to spacing. Soil boundaries were determined on the basis of soil examinations, observations, and photo interpretation. The soil material was examined with the aid of a spade, a hand auger, or a truck-mounted probe to a depth of 5 feet or more. The pedons described as typical were observed and studied in excavations.

Samples for chemical and physical analyses and engineering test data were taken from the site of the typical pedon of some of the major soils in the survey area. The analyses were made by the Agronomy and Soils Clay Mineralogy Laboratory, Auburn University, Auburn, Alabama, and by the Alabama Department of Highways and Transportation, Montgomery, Alabama. The results of some of the analyses are published in this soil survey report. Unpublished analyses and the laboratory procedures can be obtained from the laboratories.

High-altitude aerial photography base maps at a scale of 1:20,000 were used for mapping of soil and surface drainage in the field. Cultural features were transferred from U.S. Geological Survey 7.5-minute series topographic maps and were recorded from visual observations. Soil mapping, drainage patterns, and cultural features recorded on base maps were then transferred to half-tone film positives by soil scientists. The film positives were reduced to a scale of 1:24,000 and all line-work was transferred by cartographic technicians to a 1:24,000 base map developed from digital orthophotography prior to the final map finishing process.

General Soil Map Units

The general soil map at the back of this publication shows broad areas that have a distinctive pattern of soils, relief, and drainage. Each map unit on the general soil map is a unique natural landscape. Typically, it consists of one or more major soils or miscellaneous areas and some minor soils or miscellaneous areas. It is named for the major soils or miscellaneous areas. The components of one map unit can occur in another but in a different pattern.

The general soil map can be used to compare the suitability of large areas for general land uses. Areas of suitable soils can be identified on the map. Likewise, areas where the soils are not suitable can be identified.

Because of its small scale, the map is not suitable for planning the management of a farm or field or for selecting a site for a road or building or other structure. The soils in any one map unit differ from place to place in slope, depth, drainage, and other characteristics that affect management.

Each map unit is rated for *cultivated crops, pasture and hay, woodland,* and *urban uses*. Cultivated crops are those grown extensively in the survey area. Pasture and hay refer to improved, locally grown grasses and legumes. Woodland refers to areas of native or introduced trees. Urban uses include residential, commercial, and industrial developments. Table 4 summarizes the suitability and limitations of the general soil map units.

The boundaries of the general soil map units in Pickens County were matched, where possible, with those of the previously completed surveys of Fayette, Greene, Sumter, and Tuscaloosa Counties, Alabama, and Lowndes and Noxubee Counties, Mississippi. In a few areas, however, the lines do not join and the names of the map units differ. These differences result mainly because of changes in soil series concepts, differences in map unit design, and changes in soil patterns near survey area boundaries.

1. Vaiden-Okolona-Sucarnoochee

Dominantly level to very gently sloping, somewhat poorly drained and moderately well drained soils that have a clayey surface layer and subsoil; on uplands and flood plains

Setting

Location in the survey area: Southwestern part
Landscape: Blackland Prairie
Landform: Vaiden and Okolona—uplands; Sucarnoochee—flood plains
Landform position: Vaiden—broad, nearly level ridgetops and smooth, gently sloping side slopes; Okolona—slightly higher, broad, slightly convex ridgetops; Sucarnoochee—level to nearly level, flat to slightly concave slopes
Slope range: 0 to 3 percent

Composition

Percent of the survey area: 2.5
Vaiden soils: 45 percent
Okolona soils: 30 percent
Sucarnoochee soils: 15 percent
Minor soils: 10 percent, including Faunsdale and Sumter

Soil Characteristics

Vaiden soils

Surface layer: Dark grayish brown silty clay
Subsoil: Upper part—yellowish brown clay that has brownish, grayish, and reddish mottles; lower part—yellowish brown clay that has grayish mottles and grayish coatings on peds
Depth class: Very deep
Drainage class: Somewhat poorly drained
Seasonal high water table: Perched, at a depth of 1.0 to 2.0 feet from January to April
Slope range: 0 to 3 percent
Parent material: Acid, clayey sediments and the underlying alkaline clay or soft limestone(chalk)

Okolona soils

Surface layer: Very dark grayish brown silty clay
Next layer: Black clay that has brownish mottles
Subsoil: Upper part—olive gray clay that has brownish

mottles and soft masses of calcium carbonate; lower part—mottled olive, olive gray, olive brown, and dark yellowish brown clay that has soft masses of calcium carbonate
Depth class: Very deep
Drainage class: Moderately well drained
Seasonal high water table: Apparent, at a depth of 4.0 to 6.0 feet from January to April
Slope range: 0 to 3 percent
Parent material: Alkaline, clayey residuum derived from soft limestone (chalk)

Sucarnoochee soils

Surface layer: Very dark grayish brown silty clay
Next layer: Dark grayish brown clay that has olive brown mottles
Subsoil: Dark gray clay that has brownish mottles
Depth class: Very deep
Drainage class: Somewhat poorly drained
Seasonal high water table: Perched, at a depth of 0.5 foot to 1.5 feet from January to April
Slope range: 0 to 1 percent
Parent material: Alkaline, clayey alluvium

Minor soils

- The somewhat poorly drained Faunsdale soils on toeslopes
- The moderately deep Sumter soils on side slopes and knolls
- Poorly drained, clayey soils in depressions on flood plains

Use and Management

Major Uses: Cultivated crops, pasture, and hayland

Cropland

Management concerns: Vaiden—wetness and poor tilth; Okolona—poor tilth; Sucarnoochee—flooding, wetness, and poor tilth

Pasture and hayland

Management concerns: Vaiden—wetness; Okolona—slight limitations; Sucarnoochee—flooding and wetness

Woodland

Management concerns: Competition from undesirable plants, restricted use of equipment, and seedling mortality

Urban development

Management concerns: Vaiden—wetness, restricted permeability, and shrink-swell potential; Okolona—restricted permeability and shrink-swell potential; Sucarnoochee—flooding, wetness, restricted permeability, and shrink-swell potential

2. Sumter-Sucarnoochee-Faunsdale

Dominantly nearly level to strongly sloping, well drained and somewhat poorly drained soils that have a loamy or clayey surface layer and a clayey subsoil; on uplands and flood plains

Setting

Location in the survey area: Southwestern part
Landscape: Blackland Prairie
Landform: Sumter and Faunsdale—uplands; Sucarnoochee—flood plains
Landform position: Sumter—higher, convex parts of ridgetops and on side slopes; Sucarnoochee—linear to slightly concave slopes; Faunsdale—lower parts of side slopes and on toeslopes
Slope range: 0 to 12 percent

Composition

Percent of the survey area: 1.5
Sumter soils: 70 percent
Sucarnoochee soils: 15 percent
Faunsdale soils: 10 percent
Minor soils: 5 percent, including Okolona and Vaiden

Soil Characteristics

Sumter soils

Surface layer: Olive gray silty clay loam
Subsoil: Upper part—pale olive clay that has few soft masses of calcium carbonate; next part—light yellowish brown clay that has common fine nodules and soft masses of calcium carbonate; lower part—light olive brown clay that has common fine nodules and many soft masses of calcium carbonate
Bedrock layer: Soft limestone (chalk)
Depth class: Moderately deep
Drainage class: Well drained
Seasonal high water table: More than 6.0 feet deep
Slope range: 1 to 12 percent
Parent material: Alkaline, loamy and clayey residuum derived from soft limestone (chalk)

Sucarnoochee soils

Surface layer: Very dark grayish brown silty clay
Next layer: Dark grayish brown clay that has olive brown mottles
Subsoil: Dark gray clay that has brownish mottles
Depth class: Very deep

Drainage class: Somewhat poorly drained
Seasonal high water table: Perched, at a depth of 0.5 foot to 1.5 feet from January to April
Slope range: 0 to 1 percent
Parent material: Alkaline, clayey alluvium

Faunsdale soils

Surface layer: Dark grayish brown silty clay
Subsoil: Upper part—olive gray clay; next part—olive gray clay that has brownish and grayish mottles; lower part—light olive brown clay that has yellowish and grayish mottles
Depth class: Very deep
Drainage class: Somewhat poorly drained
Seasonal high water table: Perched, at a depth of 1.0 to 2.0 feet from January to April
Slope range: 0 to 3 percent
Parent material: Alkaline, clayey residuum derived from soft limestone (chalk)

Minor soils

- The very deep, dark Okolona soils on flat ridgetops
- The very deep, acid Vaiden soils on low ridges
- Poorly drained soils in depressions on flood plains

Use and Management

Major Uses: Cultivated crops, pasture, and hayland

Cropland

Management concerns: Sumter—poor tilth and erodibility; Sucarnoochee—wetness, poor tilth, and flooding; Faunsdale—wetness, poor tilth, and erodibility

Pasture and hayland

Management concerns: Sumter—slight limitations; Sucarnoochee—wetness and flooding; Faunsdale—wetness

Woodland

Management concerns: Seedling mortality rate, restricted use of equipment, and competition from undesirable plants

Urban development

Management concerns: Sumter—restricted permeability, shrink-swell potential, and depth to rock; Sucarnoochee—flooding, wetness, restricted permeability, and shrink-swell potential; Faunsdale—restricted permeability, shrink-swell potential, and wetness

3. Vaiden-Sucarnoochee

Dominantly level to very gently sloping, somewhat poorly drained soils that have a clayey surface layer and subsoil; on uplands and flood plains

Setting

Location in the survey area: Southwestern part
Landscape: Blackland Prairie
Landform: Vaiden—uplands; Sucarnoochee—flood plains
Landform position: Vaiden—broad, nearly level ridgetops and smooth, gently sloping side slopes; Sucarnoochee—level to nearly level, linear to slightly concave slopes
Slope range: 0 to 3 percent

Composition

Percent of the survey area: 1
Vaiden soils: 80 percent
Sucarnoochee soils: 15 percent
Minor soils: 5 percent, including Faunsdale, Okolona, and Sumter

Soil Characteristics

Vaiden soils

Surface layer: Dark grayish brown silty clay
Subsoil: Upper part—yellowish brown clay that has brownish, grayish, and reddish mottles; lower part—yellowish brown clay that has grayish mottles and grayish coatings on peds
Depth class: Very deep
Drainage class: Somewhat poorly drained
Seasonal high water table: Perched, at a depth of 1.0 to 2.0 feet from January to April
Slope range: 0 to 3 percent
Parent material: Acid, clayey sediments and the underlying alkaline clay or soft limestone (chalk)

Sucarnoochee soils

Surface layer: Very dark grayish brown silty clay
Next layer: Dark grayish brown clay that has olive brown mottles
Subsoil: Dark gray clay that has brownish mottles
Depth class: Very deep
Drainage class: Somewhat poorly drained
Seasonal high water table: Perched, at a depth of 0.5 foot to 1.5 feet from January to April
Slope range: 0 to 1 percent
Parent material: Alkaline, clayey alluvium

Minor soils

- The somewhat poorly drained Faunsdale soils on toeslopes
- The moderately well drained Okolona soils on high ridgetops
- The moderately deep Sumter soils on side slopes and knolls
- Poorly drained, clayey soils in depressions on flood plains

Use and Management

Major Uses: Cultivated crops, pasture, and hayland

Cropland

Management concerns: Vaiden—wetness and poor tilth; Sucarnoochee—flooding, wetness, and poor tilth

Pasture and hayland

Management concerns: Vaiden—wetness; Sucarnoochee—flooding and wetness

Woodland

Management concerns: Competition from undesirable plants, restricted use of equipment, and seedling mortality

Urban development

Management concerns: Vaiden—wetness, restricted permeability, and shrink-swell potential; Sucarnoochee—flooding, wetness, restricted permeability, and shrink-swell potential

4. Cahaba-Urbo-Una

Dominantly level to gently undulating, well drained, somewhat poorly drained, and poorly drained soils that have a loamy surface layer and subsoil or a clayey surface layer and subsoil; on flood plains

Setting

Location in the survey area: Parallel to the Tombigbee River
Landscape: Coastal Plain
Landform: Cahaba—low terraces; Urbo and Una—flood plains
Landform position: Cahaba—convex slopes on high parts of low terraces; Urbo—intermediate positions on low ridges; Una—low positions between ridges, in swales and sloughs
Slope range: 0 to 3 percent

Composition

Percent of the survey area: 8
Cahaba soils: 30 percent
Urbo soils: 25 percent
Una soils: 15 percent
Minor soils: 30 percent, including Annemaine, Bigbee, Columbus, Mooreville, and Riverview soils and Udorthents

Soil Characteristics

Cahaba soils

Surface layer: Brown sandy loam
Subsurface layer: Strong brown sandy loam
Subsoil: Upper part—yellowish red clay loam; next part—yellowish red sandy clay loam; lower part—yellowish red sandy loam
Substratum: Strong brown and yellowish brown loamy sand
Depth class: Very deep
Drainage class: Well drained
Seasonal high water table: More than 6.0 feet deep
Slope range: 0 to 2 percent
Parent material: Stratified loamy and sandy alluvium

Urbo soils

Surface layer: Dark grayish brown silty clay loam
Subsoil: Upper part—dark brown silty clay and grayish brown clay; next part—grayish brown silty clay that has brownish mottles; lower part—grayish brown clay that has brownish mottles
Depth class: Very deep
Drainage class: Somewhat poorly drained
Seasonal high water table: Perched, at a depth of 1.0 to 2.0 feet from January to April
Slope range: 0 to 3 percent
Parent material: Clayey alluvium

Una soils

Surface layer: Very dark grayish brown silty clay loam
Subsoil: Upper part—grayish brown clay that has brownish mottles; next part—light brownish gray clay that has brownish mottles; lower part—gray clay that has brownish and reddish mottles
Depth class: Very deep
Drainage class: Poorly drained
Seasonal high water table: Perched, from 2.0 feet above the surface to a depth of 0.5 foot from January to June
Slope range: 0 to 1 percent
Parent material: Clayey alluvium

Minor soils

- The moderately well drained Annemaine and Columbus soils on low terraces
- The excessively drained Bigbee, moderately well

drained Mooreville, and well drained Riverview soils on high parts of natural levees
• Udorthents in impoundments created by dikes adjacent to the Tombigbee River

Use and Management

Major Uses: Woodland, wildlife habitat, cropland, and pasture

Cropland

Management concerns: Cahaba—flooding; Urbo and Una—flooding and wetness

Pasture and hayland

Management concerns: Cahaba—flooding; Urbo and Una—flooding and wetness

Woodland

Management concerns: Cahaba—no significant limitations; Urbo and Una—competition from undesirable plants, restricted use of equipment, and seedling mortality

Urban development

Management concerns: Cahaba—flooding; Urbo and Una—flooding and wetness

5. Myatt-Columbus-Ochlockonee

Dominantly level and nearly level, poorly drained, moderately well drained, and well drained soils that have a loamy surface layer and subsoil; on low terraces and flood plains

Setting

Location in the survey area: Parallel to the Sipsey River
Landscape: Coastal Plain
Landform: Myatt and Columbus—low terraces; Ochlockonee—flood plains
Landform position: Myatt—flat and slightly concave slopes; Columbus—slightly convex slopes; Ochlockonee—convex slopes on the high parts of natural levees
Slope range: 0 to 2 percent

Composition

Percent of the survey area: 2
Myatt soils: 35 percent
Columbus soils: 30 percent
Ochlockonee soils: 20 percent
Minor soils: 15 percent, including Bigbee, Cahaba, Iuka, and Kinston

Soil Characteristics

Myatt soils

Surface layer: Dark grayish brown fine sandy loam
Subsoil: Upper part—light brownish gray clay loam that has brownish mottles; next part—gray clay loam that has brownish mottles; lower part—gray sandy clay loam that has brownish and reddish mottles
Substratum: Light brownish gray sandy loam
Depth class: Very deep
Drainage class: Poorly drained
Seasonal high water table: Apparent, at the surface to a depth of 1.0 foot from January to April
Slope range: 0 to 1 percent
Parent material: Stratified loamy alluvium

Columbus soils

Surface layer: Dark grayish brown and yellowish brown loam
Subsurface layer: Yellowish brown loam
Subsoil: Upper part—yellowish brown clay loam; next part—mottled yellowish brown, light brownish gray, and yellowish red loam; lower part—light brownish gray loam
Substratum: Mottled light brownish gray, yellowish brown, and strong brown sandy loam
Depth class: Very deep
Drainage class: Moderately well drained
Seasonal high water table: Apparent, at a depth of 2.0 to 3.0 feet from January to April
Slope range: 0 to 2 percent
Parent material: Loamy alluvium

Ochlockonee

Surface layer: Dark brown sandy loam
Subsurface layer: Brown loam
Substratum: Upper part—yellowish brown sandy loam; lower part—yellowish brown loamy sand
Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: Apparent, at a depth of 3 to 5 feet from January to April
Slope range: 0 to 2 percent
Parent material: Stratified loamy and sandy alluvium

Minor soils

• The well drained Cahaba soils, which have a reddish subsoil, in the slightly higher, more convex positions on terraces
• The excessively drained, sandy Bigbee soils on high parts of natural levees
• The moderately well drained Iuka soils on intermediate parts of natural levees

• The poorly drained Kinston soils on low parts of the flood plains

Use and Management

Major Uses: Woodland, wildlife habitat, and pasture

Cropland

Management concerns: Myatt—wetness and flooding; Columbus and Ochlockonee—flooding

Pasture and hayland

Management concerns: Myatt—wetness and flooding; Columbus and Ochlockonee—flooding

Woodland

Management concerns: Competition from undesirable plants, restricted use of equipment, and seedling mortality

Urban development

Management concerns: Flooding and wetness

6. Kinston-Mantachie-Cahaba

Dominantly level and nearly level, poorly drained, somewhat poorly drained, and well drained soils that have a loamy surface layer and subsoil or a loamy substratum; on flood plains and low terraces

Setting

Location in the survey area: Throughout the county
Landscape: Coastal Plain
Landform: Flood plains and low terraces
Landform position: Kinston—low positions that have flat to concave slopes; Mantachie—slightly convex slopes in intermediate positions on natural levees; Cahaba—convex slopes on high parts of low terraces
Slope range: 0 to 2 percent

Composition

Percent of the survey area: 6
Kinston soils: 35 percent
Mantachie soils: 25 percent
Cahaba soils: 20 percent
Minor soils: 20 percent, including Annemaine, Columbus, Mooreville, and Myatt soils and Fluvaquents

Soil Characteristics

Kinston soils

Surface layer: Dark brown clay loam
Next layer: Dark grayish brown silt loam
Substratum: Upper part—light brownish gray silt loam; next part—gray silty clay loam and loam; lower part—grayish brown loamy sand
Depth class: Very deep
Drainage class: Poorly drained
Seasonal high water table: Apparent, at the surface to a depth of 1.0 foot from January to June
Slope range: 0 to 1 percent
Parent material: Stratified loamy and sandy alluvium

Mantachie soils

Surface layer: Dark brown and brown loam
Subsoil: Upper part—mottled yellowish brown and light brownish gray sandy clay loam; next part—light brownish gray sandy clay loam that has brownish mottles; lower part—gray and light brownish gray sandy clay loam
Depth class: Very deep
Drainage class: Somewhat poorly drained
Seasonal high water table: Apparent, at a depth of 1.0 to 1.5 feet from January to April
Slope range: 0 to 1 percent
Parent material: Stratified loamy alluvium

Cahaba soils

Surface layer: Brown sandy loam
Subsurface layer: Strong brown sandy loam
Subsoil: Upper part—yellowish red clay loam; next part—yellowish red sandy clay loam; lower part—yellowish red sandy loam
Depth class: Very deep
Drainage class: Well drained
Seasonal high water table: More than 6.0 feet deep
Slope range: 0 to 2 percent
Parent material: Loamy and sandy alluvium

Minor soils

• The clayey Annemaine, moderately well drained Columbus, and poorly drained Myatt soils on low terraces
• The very poorly drained Fluvaquents in depressions
• The moderately well drained Mooreville soils on high parts of natural levees

Use and Management

Major Uses: Woodland, wildlife habitat, and pasture

Cropland

Management concerns: Kinston and Mantachie—flooding and wetness; Cahaba—flooding

Pasture and hayland

Management concerns: Kinston and Mantachie—flooding and wetness; Cahaba—flooding

Woodland

Management concerns: Kinston and Mantachie—competition from undesirable plants, restricted use of equipment, and seedling mortality; Cahaba—no significant limitations

Urban development

Management concerns: Flooding and wetness

7. Savannah-Bama-Smithdale

Dominantly nearly level to strongly sloping, moderately well drained and well drained soils that have a loamy surface layer and subsoil; on high terraces

Setting

Location in the survey area: West-central part
Landscape: Coastal Plain
Landform: High terraces
Landform position: Savannah—broad, nearly level summits and gently sloping side slopes; Bama—broad, nearly level summits and gently sloping side slopes; Smithdale—gently sloping to strongly sloping side slopes
Slope range: 0 to 15 percent

Composition

Percent of the survey area: 10
Savannah soils: 40 percent
Bama soils: 25 percent
Smithdale soils: 15 percent
Minor soils: 20 percent, including Iuka, Kinston, Lucedale, Luverne, Myatt, and Sacul

Soil Characteristics

Savannah soils

Surface layer: Dark grayish brown loam
Subsurface layer: Brown loam
Subsoil: Upper part—yellowish brown loam; next part—brittle, yellowish brown loam that has grayish mottles; lower part—yellowish brown clay loam that has grayish mottles
Depth class: Very deep
Drainage class: Moderately well drained
Seasonal high water table: Perched, at a depth of 1.5 to 3.0 feet from January to April
Slope range: 0 to 5 percent
Parent material: Loamy sediments

Bama soils

Surface layer: Dark brown loam
Subsoil: Upper part—dark red clay loam; lower part—dark red and red sandy clay loam
Depth class: Very deep
Drainage class: Well drained
Seasonal high water table: More than 6.0 feet deep
Slope range: 0 to 5 percent
Parent material: Loamy sediments

Smithdale soils

Surface layer: Yellowish brown sandy loam
Subsoil: Upper part—yellowish red clay loam and loam; next part—red loam and sandy clay loam; lower part—red sandy loam
Depth class: Very deep
Drainage class: Well drained
Seasonal high water table: More than 6.0 feet deep
Slope range: 5 to 15 percent
Parent material: Loamy sediments

Minor soils

- The moderately well drained Iuka and poorly drained Kinston soils on narrow flood plains
- Dark reddish brown Lucedale soils on broad ridgetops at higher elevations
- Scattered areas of the clayey Luverne and Sacul soils on side slopes
- The poorly drained Myatt soils in shallow depressions

Use and Management

Major Uses: Cultivated crops, pasture, hayland, and homesites

Cropland

Management concerns: Erodibility and low fertility

Pasture and hayland

Management concerns: Low fertility

Woodland

Management concerns: No significant limitations

Urban development

Management concerns: Savannah—restricted permeability and wetness; Bama—no significant limitations; Smithdale—slope in the steeper areas

8. Smithdale-Luverne-Sacul

Dominantly gently sloping to steep, well drained and moderately well drained soils that have a loamy surface layer and a loamy or clayey subsoil; on uplands

Setting

Location in the survey area: Eastern half of the county
Landscape: Coastal Plain
Landform: Uplands
Landform position: Gently sloping, narrow ridgetops and moderately sloping to steep side slopes
Slope range: 2 to 35 percent

Composition

Percent of the survey area: 52
Smithdale soils: 33 percent
Luverne soils: 27 percent
Sacul soils: 13 percent
Minor soils: 27 percent, including Bama, Cahaba, Columbus, Kinston, Mantachie, and Savannah

Soil Characteristics

Smithdale soils

Surface layer: Yellowish brown sandy loam
Subsoil: Upper part—yellowish red and red sandy clay loam; lower part—red sandy loam
Depth class: Very deep
Drainage class: Well drained
Seasonal high water table: More than 6.0 feet deep
Slope range: 5 to 35 percent
Parent material: Loamy and sandy sediments

Luverne soils

Surface layer: Brown sandy loam
Subsoil: Upper part—yellowish red clay; lower part—dark red clay loam that has brownish mottles
Substratum: Stratified red sandy loam, strong brown loamy sand, and light brownish gray sandy clay loam
Depth class: Very deep
Drainage class: Well drained
Seasonal high water table: More than 6.0 feet deep
Slope range: 2 to 35 percent
Parent material: Stratified clayey and loamy sediments

Sacul soils

Surface layer: Dark grayish brown sandy loam
Subsurface layer: Brown sandy loam
Subsoil: Upper part—red clay that has grayish mottles; next part—red clay loam that has grayish mottles; lower part—gray clay loam
Depth class: Very deep
Drainage class: Moderately well drained
Seasonal high water table: Perched, at a depth of 2.0 to 4.0 feet from January to April
Slope range: 2 to 35 percent
Parent material: Stratified clayey and loamy sediments

Minor soils

- The loamy Bama and Savannah soils on the smoother parts of ridgetops
- The well drained Cahaba and moderately well drained Columbus soils on low terraces
- The poorly drained Kinston and somewhat poorly drained Mantachie soils on narrow flood plains

Use and Management

Major Uses: Woodland, pasture, and hayland

Cropland

Management concerns: Erodibility, low fertility, and slope in the steeper areas

Pasture and hayland

Management concerns: Low fertility and slope in the steeper areas

Woodland

Management concerns: Competition from undesirable plants, erodibility, and restricted use of equipment

Urban development

Management concerns: Smithdale—slope and seepage; Luverne and Sacul—restricted permeability, low strength, shrink-swell potential, and slope

9. Smithdale-Luverne-Savannah

Dominantly gently sloping to steep, well drained and moderately well drained soils that have a loamy surface layer and a loamy or clayey subsoil; on uplands

Setting

Location in the survey area: Western and central parts
Landscape: Coastal Plain
Landform: Uplands
Landform position: Gently sloping, narrow ridgetops and moderately sloping to steep side slopes
Slope range: 2 to 35 percent

Composition

Percent of the survey area: 17

Smithdale soils: 35 percent
Luverne soils: 20 percent
Savannah soils: 20 percent
Minor soils: 25 percent, including Bama, Cahaba, Columbus, Kinston, Lucedale, Mantachie, and Sacul

Soil Characteristics

Smithdale soils

Surface layer: Yellowish brown sandy loam
Subsoil: Upper part—yellowish red and red sandy clay loam; lower part—red sandy loam
Depth class: Very deep
Drainage class: Well drained
Seasonal high water table: More than 6.0 feet deep
Slope range: 5 to 35 percent
Parent material: Loamy and sandy sediments

Luverne soils

Surface layer: Brown sandy loam
Subsoil: Upper part—yellowish red clay; lower part—dark red clay loam that has brownish mottles
Substratum: Stratified red sandy loam, strong brown loamy sand, and light brownish gray sandy clay loam
Depth class: Very deep
Drainage class: Well drained
Seasonal high water table: More than 6.0 feet deep
Slope range: 2 to 35 percent
Parent material: Stratified clayey and loamy sediments

Savannah soils

Surface layer: Dark grayish brown loam
Subsurface layer: Brown loam
Subsoil: Upper part—yellowish brown loam; next part—yellowish brown loam that is firm and brittle; lower part—yellowish brown clay loam that is firm and brittle
Depth class: Very deep
Drainage class: Moderately well drained
Seasonal high water table: Perched, at a depth of 1.5 to 3.0 feet from January to April
Slope range: 0 to 5 percent
Parent material: Loamy sediments

Minor soils

- The loamy Bama and Lucedale soils on the smoother parts of ridgetops
- The well drained Cahaba and moderately well drained Columbus soils on low terraces
- The poorly drained Kinston and somewhat poorly drained Mantachie soils on narrow flood plains
- Scattered areas of the clayey, moderately well drained Sacul soils

Use and Management

Major Uses: Woodland, pasture, and hayland

Cropland

Management concerns: Erodibility, low fertility, and slope in the steeper areas

Pasture and hayland

Management concerns: Low fertility and slope in the steeper areas

Woodland

Management concerns: Competition from undesirable plants, erodibility, and restricted use of equipment

Urban development

Management concerns: Smithdale—slope and seepage; Luverne—restricted permeability, low strength, shrink-swell potential, and slope; Savannah—restricted permeability and wetness

Detailed Soil Map Units

The map units delineated on the detailed maps at the back of this survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this section, along with the maps, can be used to determine the suitability and potential of a unit for specific uses. They also can be used to plan the management needed for those uses. More information about each map unit is given under the heading "Use and Management of the Soils."

A map unit delineation on a map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils or miscellaneous areas. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils and miscellaneous areas are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some "included" areas that belong to other taxonomic classes.

Most included soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, inclusions. They may or may not be mentioned in the map unit description. Other included soils and miscellaneous areas, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, inclusions. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. The included areas of contrasting soils or miscellaneous areas are mentioned in the map unit descriptions. A few included areas may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of included areas in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans, but if intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives the principal hazards and limitations to be considered in planning for specific uses.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Bama sandy loam, 2 to 5 percent slopes, is a phase of the Bama series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Smithdale-Luverne-Sacul complex, 15 to 35 percent slopes, is an example.

This survey includes *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Pits is an example.

Table 5 gives the acreage and proportionate extent of each map unit. Other tables give properties of the soils and the limitations, capabilities, and potentials for many uses. The “Glossary” defines many of the terms used in describing the soils or miscellaneous areas.

Soil Descriptions

AnA—Annemaine loam, 0 to 2 percent slopes, occasionally flooded

This very deep, moderately well drained soil is on low terraces that parallel the Tombigbee River and other large streams throughout the county. Slopes generally are long and smooth. Individual areas generally are oblong. They range from 10 to about 50 acres in size.

Typically, the surface layer is dark brown loam about 3 inches thick. The subsurface layer is yellowish brown loam about 5 inches thick. The subsoil extends to a depth of 44 inches. It is yellowish red silty clay in the upper part, yellowish red silty clay that has brownish and grayish mottles in the next part, and clay loam that is mottled in shades of brown, red, and gray in the lower part. The substratum extends to a depth of 65 inches. It is mottled brownish and grayish sandy clay loam in the upper part and stratified strong brown sand and light brownish gray loamy sand in the lower part.

Important properties of the Annemaine soil—

Permeability: Slow
Available water capacity: High
Organic matter content: Low
Natural fertility: Medium
Depth to bedrock: More than 60 inches
Root zone: More than 60 inches
Seasonal high water table: Apparent, at a depth of 1.5 to 2.5 feet from January to April
Shrink-swell potential: Moderate
Flooding: Occasional, for brief periods from January through April

Included in mapping are a few small areas of Cahaba, Columbus, Myatt, and Una soils. Cahaba and Columbus soils are in slightly higher, more convex landscape positions than the Annemaine soil. They are loamy throughout the profile. The poorly drained Myatt and Una soils are in small depressions. Included soils make up about 10 percent of the map unit. Individual areas generally are less than 5 acres in size.

Most areas of this map unit are used for cultivated crops, pasture, or hay. A few areas are used for woodland.

This map unit is well suited to cultivated crops. The main management concerns are the occasional flooding and the wetness. The planting of early season crops is delayed in some years because of the flooding. The surface layer is friable and easy to keep in good tilth. Shallow ditches can help to remove excess surface water. Using minimum tillage and returning all crop residue to the soil or regularly adding other organic matter improve fertility and help to maintain tilth and the content of organic matter. Most crops respond well to applications of lime and fertilizer.

This map unit is well suited to pasture and hay (fig. 2). Wetness and the occasional flooding are the main management concerns. Bermudagrass, tall fescue, and bahiagrass are suitable grasses. Shallow ditches can help to remove excess surface water. Deferred or restricted grazing during very wet periods helps to keep the pasture in good condition. Applications of lime and fertilizer improve the fertility of the soil and promote the growth of forage plants.

This map unit is well suited to loblolly pine. Other species that commonly grow in areas of this soil include shortleaf pine, yellow-poplar, sweetgum, willow oak, and water oak. On the basis of a 50-year site curve, the site index for loblolly pine is 90. The average annual growth of well stocked, even-aged, unmanaged stands of loblolly pine at 25 years of age is 2.2 cords per acre per year. The understory vegetation consists mainly of greenbrier, blackberry, Alabama supplejack, panicums, longleaf uniola, poison ivy, sweetgum, willow oak, and water oak.

This map unit has moderate limitations affecting timber management. The main management concerns are the restricted use of equipment and plant competition. Using standard wheeled and tracked equipment when the soil is wet results in rutting and compaction. Using low-pressure ground equipment reduces damage to the soil and helps to maintain productivity. Harvesting activities should be planned for seasons when the soil is dry. Plant competition reduces the growth of trees and can prevent adequate reforestation. The competing vegetation can be controlled by site preparation or prescribed burning.

This map unit is poorly suited to most urban uses. The main management concerns are the flooding and wetness. Although it is generally not feasible to control the flooding, pilings or mounds can elevate buildings above the expected level of flooding. The moderate shrink-swell potential and low strength are management concerns in areas used as sites for local roads and streets.

This map unit has good potential for openland and woodland wildlife habitat and poor potential for wetland

Figure 2.—Bahiagrass hay in an area of Annemaine loam, 0 to 2 percent slopes, occasionally flooded. This soil is well suited to pasture and hay.

wildlife habitat. Habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every three years, rotated among several tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey. Habitat for wetland wildlife can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

The capability subclass is IIw. The woodland ordination symbol is 9W.

BaA—Bama loam, 0 to 2 percent slopes

This very deep, well drained soil is on broad summits of high stream terraces. Slopes are long and smooth. Individual areas generally are broad. They range from 5 to more than 250 acres in size.

Typically, the surface layer is dark brown loam about 5 inches thick. The subsoil extends to a depth of 65 inches. It is red clay loam in the upper part and dark red and red sandy clay loam in the lower part.

Important properties of the Bama soil—

Permeability: Moderate
Available water capacity: High
Organic matter content: Low
Natural fertility: Low
Depth to bedrock: More than 60 inches
Root zone: More than 60 inches
Seasonal high water table: More than 6.0 feet deep
Shrink-swell potential: Low
Flooding: None

Included in mapping are a few small areas of Lucedale, Savannah, and Smithdale soils. Lucedale soils are in slightly higher landscape positions than the Bama soil. They are dark red throughout the subsoil. Savannah soils are in slightly lower positions than the Bama soil. They have a brownish subsoil. Smithdale soils are in landscape positions similar to those of the Bama soil. They have a significant decrease in clay content in the lower part of the subsoil. Included soils make up about 10 percent of the map unit. Individual areas generally are less than 5 acres in size.

Most areas of this map unit are used for cultivated crops, pasture, or hay. A few areas are used as homesites, and a few areas are wooded.

This map unit is well suited to cultivated crops. It has few limitations affecting this use. Low fertility, however, is a management concern. The surface layer is friable and easy to keep in good tilth. It can be tilled over a wide range of moisture content without becoming cloddy. Using conservation practices, such as cover crops, minimum tillage, and returning all crop residue to the soil or regularly adding other organic matter, improves fertility and helps to maintain tilth and the content of organic matter. Most crops respond well to systematic applications of lime and fertilizer.

This map unit is well suited to pasture and hay. It has no significant limitations affecting these uses. Low fertility, however, is a management concern. Coastal bermudagrass and bahiagrass are the most commonly grown grasses. Proper stocking rates, pasture rotation, and restricting grazing during wet periods help to keep the pasture in good condition. Applications of lime and fertilizer improve the fertility of the soil and increase the production of forage.

This map unit is well suited to loblolly pine. Other species that commonly grow in areas of this soil include longleaf pine, shortleaf pine, sweetgum, and water oak. On the basis of a 50-year site curve, the site index for loblolly pine is 90. The average annual growth of well stocked, even-aged, unmanaged stands of loblolly pine at 25 years of age is 2.2 cords per acre per year. The understory vegetation consists mainly of little bluestem, yellow jessamine, longleaf uniola, huckleberry, flowering dogwood, and greenbrier.

This map unit has few limitations affecting timber management. Plant competition is a minor management concern. Using proper site preparation and spraying, cutting, or girdling can eliminate unwanted weeds, brush, and trees.

This map unit is well suited to most urban uses. It has no significant management concerns affecting these uses.

This map unit has good potential for openland and woodland wildlife habitat and very poor potential for wetland wildlife habitat. Habitat for woodland wildlife can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every three years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.

The capability class is I. The woodland ordination symbol is 9A.

BaB—Bama sandy loam, 2 to 5 percent slopes

This very deep, well drained soil is on narrow summits and on the upper parts of side slopes of high stream terraces. Slopes generally are long and smooth. Individual areas are irregular in shape. They range from 5 to 200 acres in size.

Typically, the surface layer is brown sandy loam about 6 inches thick. The subsoil, to a depth of 65 inches, is red sandy clay loam.

Important properties of the Bama soil—

Permeability: Moderate
Available water capacity: High
Organic matter content: Low
Natural fertility: Low
Depth to bedrock: More than 60 inches
Root zone: More than 60 inches
Seasonal high water table: More than 6.0 feet deep
Shrink-swell potential: Low
Flooding: None

Included in mapping are a few small areas of Luverne, Savannah, and Smithdale soils. Luverne and Smithdale soils are in slightly lower landscape positions than the Bama soil. Luverne soils have clayey subsoil layers. Smithdale soils have a significant decease in clay content in the lower part of the subsoil. Savannah soils are in landscape positions similar to those of the Bama soil. They have a brownish subsoil. Also included are small areas that have a slope of more than 5 percent. Included soils make up about 10 percent of the map unit. Individual areas generally are less than 5 acres in size.

Most areas of this map unit are used for woodland, pasture, or hay. A few areas are used as homesites or for cultivated crops.

This map unit is well suited to cultivated crops. The main management concerns are the low fertility and a

moderate hazard of erosion. Gullies form readily in areas that have a concentrated flow of water on the surface. Conservation tillage, terraces, contour farming, and cover crops reduce the runoff rate and help to control erosion. Using minimum tillage and returning all crop residue to the soil or regularly adding other organic matter improve fertility and help to maintain tilth and the content of organic matter. Most crops respond well to additions of lime and fertilizer.

This map unit is well suited to pasture and hay. The main management concerns are low fertility and a moderate hazard of erosion. Coastal bermudagrass and bahiagrass are the most commonly grown grasses. Tillage should be on the contour or across the slope. Proper stocking rates, pasture rotation, and restricted grazing during prolonged wet or dry periods help to keep the pasture in good condition. Applications of lime and fertilizer improve the fertility of the soil and promote the growth of forage plants.

This map unit is well suited to loblolly pine. Other species that commonly grow in areas of this soil include longleaf pine, shortleaf pine, sweetgum, and water oak. On the basis of a 50-year site curve, the site index for loblolly pine is 90. The average annual growth of well stocked, even-aged, unmanaged stands of loblolly pine at 25 years of age is 2.2 cords per acre per year. The understory vegetation consists mainly of little bluestem, panicums, sumac, yellow jessamine, huckleberry, greenbrier, and flowering dogwood.

This map unit has few limitations affecting woodland management. Competition from understory plants is a minor management concern. Carefully managed reforestation helps to control competition from undesirable understory plants. Site preparation practices, such as chopping, burning, and applying herbicides, help to control the initial plant competition and facilitate mechanical planting.

This map unit is well suited to most urban uses. It has no significant management concerns affecting these uses.

This map unit has good potential for openland and woodland wildlife habitat and very poor potential for wetland wildlife habitat. Habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every three years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.

The capability subclass is IIe. The woodland ordination symbol is 9A.

BgB—Bigbee loamy sand, 0 to 5 percent slopes, occasionally flooded

This very deep, excessively drained soil is on low stream terraces and natural levees adjacent to the Tombigbee River, the Sipsey River, and other large streams. Slopes generally are long and smooth. Individual areas are oblong. They range from 10 to 150 acres in size.

Typically, the surface layer is very dark grayish brown loamy sand about 6 inches thick. The substratum extends to a depth of 88 inches. It is dark brown loamy sand in the upper part, dark yellowish brown loamy sand and brownish yellow sand in the next part, and very pale brown sand in the lower part.

Important properties of the Bigbee soil—

Permeability: Rapid
Available water capacity: Low
Organic matter content: Low
Natural fertility: Low
Depth to bedrock: More than 60 inches
Root zone: More than 60 inches
Seasonal high water table: Apparent, at a depth of 3.5 to 6.0 feet from January to April
Shrink-swell potential: Low
Flooding: Occasional, for brief periods from January through April

Included in mapping are a few small areas of Annemaine, Cahaba, Riverview, and Kinston soils. Annemaine soils are in the slightly lower positions on the low terraces. They are clayey in the upper part of the subsoil. Cahaba and Riverview soils are in positions similar to those of the Bigbee soil. Cahaba soils have a reddish, loamy subsoil. Riverview soils have a brownish, loamy subsoil. Kinston soils are in drainageways and are poorly drained. Included soils make up about 10 percent of the map unit. Individual areas generally are less than 5 acres in size.

Most areas of this map unit are used for pasture or woodland. A few areas are used for cultivated crops or hay.

This map unit is suited to cultivated crops. The low fertility, the low available water capacity, and the occasional flooding are the main management concerns. The planting of early season crops is delayed in some years because of the flooding. If this soil is used for row crops, conservation tillage, crop rotation, and cover crops help to conserve moisture and control runoff and erosion. Irrigation can prevent crop damage and increase productivity in most years. Using minimum tillage and returning all crop residue to the soil or regularly adding other organic matter

improve fertility and help to conserve moisture and maintain tilth and the content of organic matter. Crops respond well to applications of lime and frequent, light applications of fertilizer.

This map unit is well suited to pasture and hay. Droughtiness and the occasional flooding are the main management concerns. Bahiagrass and coastal bermudagrass are the most commonly grown grasses. The leaching of plant nutrients is a management concern. Split applications of nitrogen fertilizer help to maintain the productivity of grasses. Proper stocking rates, pasture rotation, and restricted grazing during prolonged dry periods help to keep the pasture in good condition.

This map unit is suited to loblolly pine. Other species that commonly grow in areas of this soil include longleaf pine, sweetgum, and water oak. On the basis of a 50-year site curve, the site index for loblolly pine is 75. The average annual growth of well stocked, even aged, unmanaged stands of loblolly pine at 25 years of age is 1.6 cords per acre per year. The understory vegetation consists mainly of huckleberry, greenbrier, pricklypear cactus, blackberry, common persimmon, blackjack oak, and water oak.

This map unit has moderate limitations affecting timber management. The main management concerns are the restricted use of equipment and the seedling mortality rate. The sandy texture restricts the use of wheeled equipment, especially when the soil is very dry. Harvesting activities should be planned for seasons when the soil is moist. The moderate seedling mortality rate is caused by droughtiness. It can be compensated for by increasing the number of trees planted.

This map unit is poorly suited to most urban uses. It has severe limitations affecting building sites and most kinds of sanitary facilities and has moderate limitations affecting local roads and streets. The main management concerns are the sandy texture, seepage, wetness, and the hazard of flooding. Pilings or well-compacted fill can elevate buildings above the expected level of flooding. Septic tank absorption fields may not function properly during rainy periods because of the seasonal high water table. Increasing the size of the absorption field or constructing the absorption field on a raised bed helps to overcome this limitation.

This map unit has fair potential for openland wildlife habitat, poor potential for woodland wildlife habitat, and very poor potential for wetland wildlife habitat. Habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the establishment of desirable plants. Prescribed burning every three years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.

The capability subclass is IIIs. The woodland ordination symbol is 7S.

CbA—Cahaba sandy loam, 0 to 2 percent slopes, occasionally flooded

This very deep, well drained soil is on low terraces that parallel the Tombigbee River, the Sipsey River, and other large streams throughout the county. Slopes generally are long and smooth. Individual areas are oblong. They range from 5 to 150 acres in size.

Typically, the surface layer is brown sandy loam about 6 inches thick. The subsurface layer is strong brown sandy loam about 4 inches thick. The subsoil extends to a depth of 38 inches. It is yellowish red clay loam in the upper part, yellowish red sandy clay loam in the next part, and yellowish red sandy loam in the lower part. The substratum, to a depth of 65 inches, is strong brown and yellowish brown loamy sand.

Important properties of the Cahaba soil—

Permeability: Moderate in the upper part of the subsoil and moderately rapid in the lower part
Available water capacity: High
Organic matter content: Low
Natural fertility: Low
Depth to bedrock: More than 60 inches
Root zone: More than 60 inches
Seasonal high water table: More than 6.0 feet deep
Shrink-swell potential: Low
Flooding: Occasional, for brief periods from January through April

Included in mapping are a few small areas of Annemaine, Bigbee, Columbus, Kinston, and Urbo soils. The moderately well drained Annemaine soils are in slightly lower, more concave landscape positions than the Cahaba soil. They are clayey in the upper part of the subsoil. Bigbee soils are in landscape positions similar to those of the Cahaba soil. They are sandy throughout. The moderately well drained Columbus soils are in slightly lower, less convex positions than the Cahaba soil. They have a brownish subsoil. The poorly drained Kinston and somewhat poorly drained Urbo soils are in small depressions and drainageways. Included soils make up about 10 percent of the map unit. Individual areas generally are less than 5 acres in size.

Most areas of this map unit are used for cultivated crops, pasture, or hay. A few areas are used for woodland.

This map unit is well suited to cultivated crops. The main management concern is the occasional flooding. The planting of early season crops is delayed in some years because of the flooding. Using minimum tillage and returning all crop residue to the soil or regularly adding other organic matter improve fertility and help to maintain tilth and the content of organic matter. Most crops respond well to applications of lime and fertilizer.

This map unit is well suited to pasture and hay. The occasional flooding is the main management concern. Coastal bermudagrass and bahiagrass are the most commonly grown grasses. Proper stocking rates, pasture rotation, and restricted grazing during prolonged wet or dry periods help to keep the pasture in good condition. Applications of lime and fertilizer improve the fertility of the soil and promote the growth of forage plants.

This map unit is well suited to loblolly pine. Other species that commonly grow in areas of this soil include longleaf pine, yellow-poplar, sweetgum, and water oak. On the basis of a 50-year site curve, the site index for loblolly pine is 95. The average annual growth of well stocked, even-aged, unmanaged stands of loblolly pine at 25 years of age is 2.5 cords per acre per year. The understory vegetation consists mainly of greenbrier, little bluestem, panicums, American holly, longleaf uniola, sweetgum, and flowering dogwood.

This map unit has few limitations affecting woodland management. Competition from understory plants is a minor management concern. Carefully managed reforestation helps to control competition from undesirable understory plants. Site preparation practices, such as chopping, burning, and applying herbicides, help to control the initial plant competition and facilitate mechanical planting.

This map unit is poorly suited to most urban uses. The hazard of flooding is severe and difficult to overcome. If this soil is used as a homesite, the building should be constructed on elevated, well-compacted fill material to minimize damage from floodwater.

This map unit has good potential for openland and woodland wildlife habitat and very poor potential for wetland wildlife habitat. Habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the establishment of desirable plants (fig. 3). Prescribed burning every three years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.

The capability subclass is IIw. The woodland ordination symbol is 10A.

CoA—Columbus loam, 0 to 2 percent slopes, occasionally flooded

This very deep, moderately well drained soil is on low terraces that parallel the Tombigbee River, the Sipsey River, and other large streams throughout the county. Slopes generally are long and smooth. Individual areas generally are oblong. They range from 10 to about 350 acres in size.

Typically, the surface layer is dark grayish brown and yellowish brown loam about 6 inches thick. The subsurface layer is yellowish brown loam about 5 inches thick. The subsoil extends to a depth of 44 inches. It is yellowish brown clay loam in the upper part; mottled yellowish brown, light brownish gray, and yellowish red loam in the next part; and light brownish gray loam in the lower part. The substratum, to a depth of 65 inches, is mottled light brownish gray, yellowish brown, and strong brown sandy loam.

Important properties of the Columbus soil—

Permeability: Moderate
Available water capacity: High
Organic matter content: Low
Natural fertility: Low
Depth to bedrock: More than 60 inches
Root zone: More than 60 inches
Seasonal high water table: Apparent, at a depth of 2.0 to 3.0 feet from January to April
Shrink-swell potential: Low
Flooding: Occasional, for brief periods from January through April

Included in mapping are a few small areas of Annemaine, Cahaba, Kinston, and Myatt soils. Annemaine soils are in slightly lower positions than the Columbus soil. They have reddish colors and clayey textures in the upper part of the subsoil. Cahaba soils are in slightly higher, more convex landscape positions than the Columbus soil. They have reddish colors in the subsoil. The poorly drained Kinston and Myatt soils are in narrow drainageways and shallow depressions. Included soils make up about 10 percent of the map unit. Individual areas generally are less than 5 acres in size.

Most areas of this map unit are used for woodland. A few areas are used for cultivated crops, pasture, or hay.

This map unit is well suited to cultivated crops. The main management concerns are wetness and the occasional flooding. The planting of early season crops is delayed in some years because of the flooding. The surface layer is friable and easy to keep in good tilth. It can be worked over a wide range of moisture content.

Figure 3.—Wheat and oats in an area of Cahaba sandy loam, 0 to 2 percent slopes, occasionally flooded. Cool-season grasses such as these provide supplemental grazing to deer and turkey during winter and spring.

Shallow ditches can help to remove excess surface water. Using minimum tillage and returning all crop residue to the soil or regularly adding other organic matter improve fertility and help to maintain tilth and the content of organic matter. Most crops respond well to applications of lime and fertilizer.

This map unit is well suited to pasture and hay. Wetness and the occasional flooding are the main management concerns. Coastal bermudagrass and bahiagrass are the most commonly grown grasses. Shallow ditches can help to remove excess surface water. Deferred or restricted grazing during very wet periods helps to keep the pasture in good condition. Applications of lime and fertilizer improve the fertility of the soil and promote the growth of forage plants.

This map unit is well suited to loblolly pine and hardwoods. Species other than loblolly pine that commonly grow in areas of this soil include longleaf pine, yellow-poplar, sweetgum, cherrybark oak, and water oak. On the basis of a 50-year site curve, the site index for loblolly pine is 95. The average annual growth of well stocked, even-aged, unmanaged stands of loblolly pine at 25 years of age is 2.5 cords per acre per year. The understory vegetation consists mainly of greenbrier, Alabama supplejack, switchcane, blackberry, panicums, longleaf uniola, poison ivy, sweetgum, and water oak.

This map unit has moderate limitations affecting timber management. The main management concerns are the restricted use of equipment and plant competition. Using standard wheeled and tracked equipment when the soil is wet results in rutting and compaction. Using low-pressure ground equipment reduces damage to the soil and helps to maintain productivity. Harvesting activities should be planned for seasons when the soil is dry. Plant competition reduces the growth of trees and can prevent adequate reforestation. The competing vegetation can be controlled by site preparation or prescribed burning.

This map unit is poorly suited to most urban uses. The main management concerns are the flooding and wetness. Although it is generally not feasible to control

the flooding, pilings or mounds can elevate buildings above the expected level of flooding. Septic tank absorption fields may not function properly because of the seasonal high water table. Enlarging the size of the absorption field or using an alternative method of waste disposal helps to overcome this limitation.

This map unit has good potential for openland and woodland wildlife habitat and poor potential for wetland wildlife habitat. Habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every three years, rotated among several tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.

The capability subclass is IIw. The woodland ordination symbol is 10W.

FaA—Faunsdale silty clay, 0 to 1 percent slopes

This very deep, somewhat poorly drained soil is on toeslopes and at the heads of drainageways in the uplands of the Blackland Prairie. Slopes are long and smooth. Individual areas are irregular in shape. They range from 5 to 200 acres in size.

Typically, the surface layer is dark grayish brown silty clay about 9 inches thick. The subsoil is clay and extends to a depth of 62 inches. It is olive gray in the upper part, olive gray and has brownish and grayish mottles in the next part, and light olive brown and has yellowish and grayish mottles in the lower part. Soft masses and concretions of calcium carbonate are throughout the profile.

Important properties of the Faunsdale soil—

Permeability: Very slow
Available water capacity: Moderate
Organic matter content: Medium
Natural fertility: High
Depth to bedrock: More than 60 inches
Root zone: More than 60 inches
Seasonal high water table: Perched, at a depth of 1.0 to 2.0 feet from January to April
Shrink-swell potential: High
Flooding: None

Included in mapping are a few small areas of Okolona, Sucarnoochee, Sumter, and Vaiden soils. Okolona soils are in slightly higher positions than the Faunsdale soil. They have a thick, dark-colored surface layer. Sucarnoochee soils are on narrow flood plains and are subject to frequent flooding. Sumter soils are in higher positions than the Faunsdale soil. They are moderately deep over bedrock. Vaiden soils are in slightly higher positions than the Faunsdale soil. They are acid in the upper part of the solum. Included soils make up about 10 percent of the map unit. Individual areas generally are less than 5 acres in size.

Most areas of this map unit are used for pasture and hay. A few areas are used for cultivated crops.

This map unit is suited to most cultivated crops. The main management concerns are poor tilth and wetness. This soil can be worked only within a narrow range of moisture content. It becomes cloddy if tilled when too wet or too dry. Returning all crop residue to the soil improves tilth, reduces crusting, and increases the available water capacity. The wetness delays planting of early season crops in most years. Proper row arrangement, field ditches, and vegetated outlets can help to remove excess water.

This map unit is well suited to pasture and hay. Wetness is the main limitation. Shallow ditches can help to remove excess surface water. Tall fescue, dallisgrass, and bahiagrass are the most commonly grown grasses. The seedbed should be prepared on the contour or across the slope. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture in good condition.

This map unit is suited to eastern redcedar and hardwoods. Species other than eastern redcedar that commonly grow in areas of this soil include sugarberry, green ash, and pecan. On the basis of a 50-year site curve, the site index for eastern redcedar is 40. The average annual growth of well stocked, even-aged, unmanaged stands of eastern redcedar at 40 years of age is 140 board feet per acre per year. The understory vegetation consists mainly of panicums, Johnsongrass, broomsedge bluestem, blackberry, MaCartney rose, winged elm, sugarberry, osageorange, and hawthorns.

This map unit has moderate limitations affecting timber management. The main management concerns are the restricted use of equipment, the seedling mortality rate, and plant competition. Wetness and the clayey texture of the surface layer and the subsoil restrict the use of equipment, especially during rainy periods. Using standard wheeled and tracked equipment when the soil is wet results in rutting and compaction. Using low-pressure ground equipment reduces damage to the soil and helps to maintain productivity. Harvesting and management activities should be planned for seasons when the soil is dry. Planting rates can be increased to compensate for the high rate of seedling mortality. Plant competition reduces the growth of trees and can prevent adequate reforestation unless sites receive intensive preparation and maintenance. Site preparation can control the

initial plant competition, and herbicides can be used to control the subsequent growth.

This map unit is poorly suited to most urban uses. It has severe limitations affecting building sites, local roads and streets, and most kinds of sanitary facilities. The main management concerns are the high shrink-swell potential, the very slow permeability, wetness, and low strength on sites for roads and streets. If excavations are made, the cutbanks cave easily. Support beams should be used to maintain the stability of the cutbanks. Properly designing foundations and footings and diverting runoff away from the buildings help to prevent the structural damage that results from shrinking and swelling. Special design is needed for roads and streets to compensate for the instability of the subsoil. Septic tank absorption fields do not function properly because of the very slow permeability. An alternate method is needed to dispose of sewage properly.

This map unit has fair potential for openland and woodland wildlife habitat and very poor potential for wetland wildlife habitat. Habitat for deer, turkey, and squirrel can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Habitat for openland wildlife can be improved by planting grasses and other seed-producing plants around cropland and pasture. Habitat for wetland wildlife can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

The capability subclass is IIIw. The woodland ordination symbol is 3C.

FaB—Faunsdale silty clay, 1 to 3 percent slopes

This very deep, somewhat poorly drained soil is on toeslopes and side slopes in the uplands of the Blackland Prairie. Slopes are long and smooth. Individual areas are irregular in shape. They range from 10 to 150 acres in size.

Typically, the surface layer is dark brown silty clay about 5 inches thick. The subsoil extends to a depth of 66 inches. It is olive gray silty clay in the upper part, olive gray clay that has brownish and grayish mottles in the next part, and olive brown clay that has yellowish and grayish mottles in the lower part. Soft masses and concretions of calcium carbonate are throughout the profile.

Important properties of the Faunsdale soil—

Permeability: Very slow
Available water capacity: Moderate
Organic matter content: Medium
Natural fertility: High
Depth to bedrock: More than 60 inches
Root zone: More than 60 inches
Seasonal high water table: Perched, at a depth of 1.0 to 2.0 feet from January to April
Shrink-swell potential: High
Flooding: None

Included in mapping are a few small areas of Okolona, Sucarnoochee, Sumter, and Vaiden soils. Okolona soils are in slightly higher positions than the Faunsdale soil. They have a thick, dark-colored surface layer. Sucarnoochee soils are on narrow flood plains and are subject to frequent flooding. Sumter soils are in higher positions than the Faunsdale soil. They are moderately deep over bedrock. Vaiden soils are in slightly higher positions than the Faunsdale soil. They are acid in the upper part of the solum. Included soils make up about 10 percent of the map unit. Individual areas generally are less than 5 acres in size.

Most areas of this map unit are used for pasture and hay. A few areas are used for cultivated crops.

This map unit is suited to most cultivated crops. The main management concerns are poor tilth, the moderate hazard of erosion, and wetness. This soil can be worked only within a narrow range of moisture content. It becomes cloddy if tilled when too wet or too dry. Conservation tillage, contour farming, and cover crops help to reduce the runoff rate and control erosion. Returning all crop residue to the soil improves tilth, reduces crusting, and increases the available water capacity. The wetness delays planting of early season crops in most years. Proper row arrangement, shallow field ditches, and vegetated outlets can help to remove excess water.

This map unit is well suited to pasture and hay. Wetness is the main limitation. Shallow ditches can help to remove excess surface water. Tall fescue, dallisgrass, and bahiagrass are the most commonly grown grasses. The seedbed should be prepared on the contour or across the slope. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture in good condition.

This map unit is suited to eastern redcedar and hardwoods. Species other than eastern redcedar that commonly grow in areas of this soil include sugarberry, green ash, and pecan. On the basis of a 50-year site curve, the site index for eastern redcedar is 40. The average annual growth of well stocked, even-aged, unmanaged stands of eastern redcedar at 40 years of age is 140 board feet per acre per year. The understory vegetation consists mainly of panicums,

Johnsongrass, broomsedge bluestem, blackberry, MaCartney rose, winged elm, sugarberry, osageorange, and hawthorns.

This map unit has moderate limitations affecting timber management. The main management concerns are the restricted use of equipment, the seedling mortality rate, and plant competition. Wetness and the clayey texture of the surface layer and the subsoil restrict the use of equipment, especially during rainy periods. Using standard wheeled and tracked equipment when the soil is wet results in rutting and compaction. Using low-pressure ground equipment reduces damage to the soil and helps to maintain productivity. Harvesting and management activities should be planned for seasons when the soil is dry. Planting rates can be increased to compensate for the high rate of seedling mortality. Plant competition reduces the growth of trees and can prevent adequate reforestation unless sites receive intensive preparation and maintenance. Site preparation can control the initial plant competition, and herbicides can be used to control the subsequent growth.

This map unit is poorly suited to most urban uses. It has severe limitations affecting building sites, local roads and streets, and most kinds of sanitary facilities. The main management concerns are the high shrink-swell potential, the very slow permeability, wetness, and low strength on sites for roads and streets. If excavations are made, the cutbanks cave easily. Support beams should be used to maintain the stability of the cutbanks. Properly designing foundations and footings and diverting runoff away from the buildings help to prevent the structural damage that results from shrinking and swelling. Special design is needed for roads and streets to compensate for the instability of the subsoil. Septic tank absorption fields do not function properly because of the very slow permeability. An alternate method is needed to dispose of sewage properly.

This map unit has fair potential for openland and woodland wildlife habitat and very poor potential for wetland wildlife habitat. Habitat for deer, turkey, and squirrel can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Habitat for openland wildlife can be improved by planting grasses and other seed-producing plants around cropland and pasture. Habitat for wetland wildlife can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

The capability subclass is IIIe. The woodland ordination symbol is 3C.

FvA—Fluvaquents, ponded

This map unit consists of very deep, very poorly drained soils in swales, sloughs, oxbows, beaver ponds, and other shallow depressions on flood plains along streams that drain the Coastal Plain. Slopes are smooth and concave. Most areas are subject to ponding for several months in most years. Individual areas vary in shape from circular to long and narrow. They range from 5 to 200 acres in size.

Important properties of the Fluvaquents—

Permeability: Slow
Available water capacity: High
Organic matter content: Medium
Natural fertility: Medium
Depth to bedrock: More than 60 inches
Root zone: More than 60 inches
Seasonal high water table: Apparent, from 2.0 feet above the surface to a depth of 1.0 foot from January through December
Shrink-swell potential: Low
Flooding: Frequent, for brief periods from January through December

Included in mapping are a few small areas of Mantachie and Iuka soils. The somewhat poorly drained Mantachie and moderately well drained Iuka soils are in slightly higher positions than the Fluvaquents. They are not subject to ponding. Included soils make up about 5 percent of the map unit. Individual areas generally are less than 5 acres in size.

Most areas of this map unit are used for woodland and for wildlife habitat. This map unit is not suited to cultivated crops, pasture, or hay. Wetness, ponding, and the flooding are severe limitations affecting these uses.

This map unit is suited to the production of baldcypress, water tupelo, and green ash. Other species that commonly grow in areas of this map unit include blackgum, sweetgum, overcup oak, red maple, and swamp tupelo. The understory vegetation consists mainly of black alder, bulrush, sedges, greenbrier, ferns, switchcane, red maple, and black willow.

The main management concerns are the restricted use of equipment, the seedling mortality rate, and plant competition. The seasonal high water table and the ponding restrict the use of equipment to periods when the soils are dry. Using standard wheeled and tracked equipment when the soils are wet results in rutting and compaction. Using low-pressure ground equipment reduces damage to the soils and helps to maintain productivity. The high seedling mortality rate is caused by excessive wetness. It can be compensated for by

planting on beds or increasing the number of trees planted. Plant competition can prevent adequate natural or artificial reforestation unless sites receive intensive preparation and maintenance. Site preparation can control the initial plant competition, and herbicides can be used to control the subsequent growth.

This map unit is not suited to most urban uses. The ponding, wetness, and the frequent flooding are severe limitations affecting most uses. Well-compacted fill can elevate buildings and roads above the expected level of flooding.

This map unit has poor potential for openland and woodland wildlife habitat and good potential for wetland wildlife habitat. Habitat for openland and woodland wildlife can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the establishment of desirable plants. Habitat for wetland wildlife can be improved by providing more open water areas for waterfowl and furbearers and by planting mast producing trees.

The capability subclass is VIIw. The woodland ordination symbol is 5W.

KmA—Kinston-Mantachie complex, 0 to 1 percent slopes, frequently flooded

This map unit consists of the very deep, poorly drained Kinston soil and the somewhat poorly drained Mantachie soil on flood plains along streams that drain the Coastal Plain. These soils are subject to frequent flooding for brief periods several times each year. The soils occur as areas so intricately intermingled that they could not be mapped separately at the scale selected for mapping. The Kinston soil makes up about 45 percent of the map unit, and the Mantachie soil makes up about 40 percent. Individual areas are long and narrow. They range from 10 to more than 400 acres in size.

The Kinston soil is in flat to concave positions, generally at the lowest elevations on the flood plain. Typically, the surface layer is dark brown clay loam about 5 inches thick. The next layer is dark grayish brown silt loam about 3 inches thick. The substratum extends to a depth of 65 inches. It is light brownish gray silt loam in the upper part, gray silty clay loam and loam in the next part, and grayish brown loamy sand in the lower part. The substratum has mottles in shades of brown and yellow throughout.

Important properties of the Kinston soil—

Permeability: Moderate
Available water capacity: High
Organic matter content: Medium
Natural fertility: Medium
Depth to bedrock: More than 60 inches
Root zone: More than 60 inches
Seasonal high water table: Apparent, at the surface to a depth of 1.0 foot from January to Jue
Shrink-swell potential: Low
Flooding: Frequent, for brief periods from January through April

The Mantachie soil is on the higher, more convex parts of the flood plain. Typically, the surface layer is dark brown loam about 6 inches thick. The next layer is brown loam about 6 inches thick. The subsoil is sandy clay loam and extends to a depth of 62 inches. In the upper part, it is mottled yellowish brown and light brownish gray. In the next part, it is light brownish gray and has brownish mottles. In the lower part, it is gray and light brownish gray.

Important properties of the Mantachie soil—

Permeability: Moderate
Available water capacity: High
Organic matter content: Medium
Natural fertility: Medium
Depth to bedrock: More than 60 inches
Root zone: More than 60 inches
Seasonal high water table: Apparent, at a depth of 1.0 to 1.5 feet from January through April
Shrink-swell potential: Low
Flooding: Frequent, for brief periods from January through April

Included in mapping are a few small areas of Cahaba, Iuka, Mooreville, and Ochlockonee soils. The well drained Cahaba soils are on low knolls or remnants of terraces at the slightly higher elevations. They are not subject to frequent flooding. The moderately well drained Iuka and Mooreville soils and the well drained Ochlockonee soils are on high parts of natural levees. Also included are small areas of very poorly drained Fluvaquents in depressions that are subject to ponding. Included soils make up about 15 percent of the map unit. Individual areas generally are less than 5 acres in size.

Most areas of this map unit are wooded and are used for wildlife habitat. A few areas are used for pasture, hay, or cultivated crops.

This map unit is poorly suited to most cultivated crops. The frequent flooding and the wetness are the main management concerns. If cultivated crops are grown, a surface drainage system and protection from the flooding are needed.

This map unit is poorly suited to pasture and hay because of the frequent flooding and the

Figure 4.—Loblolly pine planted on raised beds in an area of Kinston-Mantachie complex, 0 to 1 percent slopes, frequently flooded. This management practice is common in the county on poorly drained soils, such as this Kinston soil.

wetness. If areas are used for pasture or hay, grasses that tolerate the wet soil conditions should be selected. Common bermudagrass is suitable. Shallow ditches can help to remove excess water from the surface.

This map unit is suited to loblolly pine and hardwoods. Species of hardwood that commonly grow in areas of this map unit include sweetgum, American sycamore, yellow-poplar, willow oak, water oak, swamp chestnut oak, and green ash. On the basis of a 50-year site curve, the site index for loblolly pine is 100. The average annual growth of well stocked, even-aged, unmanaged stands of loblolly pine at 25 years of age is 2.7 cords per acre per year. The understory vegetation consists mainly of sweetgum, blackgum, water oak, Alabama supplejack, panicums, sweetbay, green ash, and red maple.

This map unit has severe limitations affecting timber management. The main management concerns are the restricted use of equipment, the seedling mortality rate, and plant competition. The seasonal high water table and the flooding restrict the use of equipment to periods when the soils are dry. Using standard wheeled and tracked equipment when the soils are wet results in rutting and compaction. Using low-pressure ground equipment reduces damage to the soils and helps to maintain productivity. The high seedling mortality rate is caused by excessive wetness. It can be reduced by planting on beds or compensated for by increasing the number of trees planted (fig. 4). Plant competition reduces the growth of trees and can prevent adequate reforestation unless sites receive intensive preparation and maintenance. Site preparation can control the initial plant competition, and herbicides can be used to control the subsequent growth.

This map unit is not suited to most urban uses. The

flooding and wetness are severe limitations affecting most uses. Although it is generally not feasible to control the flooding, pilings or mounds can elevate buildings above the expected level of flooding.

The Kinston soil has poor potential for openland wildlife habitat, fair potential for woodland wildlife habitat, and good potential for wetland wildlife habitat. The Mantachie soil has fair potential for openland and wetland wildlife habitat and good potential for woodland wildlife habitat. Habitat for openland and woodland wildlife can be improved by planting or encouraging the growth of oak trees and suitable understory plants. Habitat for wetland wildlife can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

The capability subclass is Vw. The woodland ordination symbol is 11W.

LdA—Lucedale loam, 0 to 2 percent slopes

This very deep, well drained soil is on broad summits of high stream terraces. Slopes are long and smooth. Individual areas generally are broad or oblong. They range from 10 to 600 acres in size.

Typically, the surface layer is dark reddish brown loam about 7 inches thick. The subsoil extends to a depth of 72 inches. It is dark red loam in the upper part, dark red clay loam in the next part, and dark red sandy clay loam in the lower part.

Important properties of the Lucedale soil—

Permeability: Moderate
Available water capacity: High
Organic matter content: Low
Natural fertility: Low
Depth to bedrock: More than 60 inches
Root zone: More than 60 inches
Seasonal high water table: More than 6.0 feet deep
Shrink-swell potential: Low
Flooding: None

Included in mapping are a few small areas of Bama and Smithdale soils. Bama soils are in landscape positions similar to those of the Lucedale soil. They do not have dark red colors throughout the subsoil. Smithdale soils are on the lower parts of slopes. They also do not have dark red colors throughout the subsoil. Also included are a few small areas of poorly drained soils in shallow depressions. Included soils make up about 10 percent of the map unit. Individual areas generally are less than 5 acres in size.

Most areas of this map unit are used for cultivated crops, pasture, or hay. A few areas are used as homesites, and a few other areas are wooded.

This map unit is well suited to cultivated crops. It has few limitations affecting this use. Low fertility, however, is a management concern. The surface layer is friable and easy to keep in good tilth. It can be tilled over a wide range of moisture content without becoming cloddy. Using conservation practices, such as cover crops, minimum tillage, and returning all crop residue to the soil or regularly adding other organic matter, improves fertility and helps to maintain tilth and the content of organic matter. Most crops respond well to systematic applications of lime and fertilizer.

This map unit is well suited to pasture and hay. It has no significant limitations affecting these uses. Low fertility, however, is a management concern. Coastal bermudagrass and bahiagrass are the most commonly grown grasses. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture in good condition. Applications of lime and fertilizer improve the fertility of the soil and increase the production of forage.

This map unit is well suited to loblolly pine. Other species that commonly grow in areas of this soil include longleaf pine, shortleaf pine, sweetgum, and water oak. On the basis of a 50-year site curve, the site index for loblolly pine is 90. The average annual growth of well stocked, even-aged, unmanaged stands of loblolly pine at 25 years of age is 2.2 cords per acre per year. The understory vegetation consists mainly of little bluestem, yellow jessamine, panicums, poison ivy, greenbrier, flowering dogwood, and sweetgum.

This map unit has few limitations affecting timber management. Plant competition is a minor management concern. Using proper site preparation and spraying, cutting, or girdling can eliminate unwanted weeds, brush, and trees.

This map unit is well suited to most urban uses. It has no significant management concerns affecting these uses.

This map unit has good potential for openland and woodland wildlife habitat and very poor potential for wetland wildlife habitat. Habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every three years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.

The capability class is I. The woodland ordination symbol is 9A.

LnC—Luverne sandy loam, 5 to 8 percent slopes

This very deep, well drained soil is on side slopes and narrow ridgetops in the uplands. Slopes generally are short and complex. Most areas are irregular in shape. They range from 10 to 250 acres in size.

Typically, the surface layer is dark brown sandy loam about 7 inches thick. The subsoil extends to a depth of 41 inches. It is yellowish red clay in the upper part, yellowish red clay that has strong brown mottles in the next part, and red sandy clay loam that has strong brown mottles in the lower part. The substratum, to a depth of 60 inches, is stratified red, gray, and yellowish brown sandy clay loam, sandy loam, and loamy sand.

Important properties of the Luverne soil—

Permeability: Moderately slow
Available water capacity: High
Organic matter content: Low
Natural fertility: Low
Depth to bedrock: More than 60 inches
Root zone: More than 60 inches
Seasonal high water table: More than 6.0 feet deep
Shrink-swell potential: Moderate
Flooding: None

Included in mapping are a few small areas of Iuka, Kinston, Sacul, and Smithdale soils. The moderately well drained Iuka and poorly drained Kinston soils are on narrow flood plains. Sacul and Smithdale soils are in landscape positions similar to those of the Luverne soil. Sacul soils have grayish mottles in the upper part of the subsoil. Smithdale soils are loamy throughout. Included soils make up about 15 percent of the map unit. Individual areas generally are less than 5 acres in size.

Most areas of this map unit are used for woodland or pasture. A few areas are used for cultivated crops or hay.

This map unit is suited to cultivated crops. The main management concerns are the low fertility and a severe hazard of erosion. Terraces, contour farming, minimum tillage, and cover crops reduce the runoff rate and help to control erosion. Installing drop-inlet structures in grassed waterways helps to prevent gullying. Using a sod-based rotation system and incorporating crop residue into the soil increase the content of organic matter and improve tilth. Most crops respond well to systematic applications of lime and fertilizer.

This map unit is well suited to pasture and hay. Erosion is a hazard if the surface is left bare during the establishment of pasture. Tillage should be on the contour or across the slope to minimize soil losses. Proper stocking rates, pasture rotation, and restricted grazing during prolonged wet or dry periods help to keep the pasture in good condition. Applications of lime and fertilizer improve the fertility of the soil and increase the production of forage.

This map unit is well suited to loblolly pine. Other species that commonly grow in areas of this soil include longleaf pine, shortleaf pine, sweetgum, and water oak. On the basis of a 50-year site curve, the site index for loblolly pine is 90. The average annual growth of well stocked, even-aged, unmanaged stands of loblolly pine at 25 years of age is 2.2 cords per acre per year. The understory vegetation consists mainly of little bluestem, panicums, greenbrier, poison ivy, huckleberry, muscadine grape, waxmyrtle, and flowering dogwood.

This map unit has moderate limitations affecting timber management. The main management concerns are the restricted use of equipment and plant competition. The low strength of the clayey subsoil restricts the use of equipment, especially when the soil is wet. Using standard wheeled and tracked equipment when the soil is wet results in rutting and compaction. Using low-pressure ground equipment reduces damage to the soil and helps to maintain productivity. Plant competition reduces the growth of trees and can prevent adequate reforestation unless sites receive intensive preparation and maintenance. Site preparation can control the initial plant competition, and herbicides can be used to control the subsequent growth.

This map unit is suited to most urban uses. It has moderate limitations affecting building sites and severe limitations affecting local roads and streets and most kinds of sanitary facilities. The main management concerns are the moderate shrink-swell potential, the moderately slow permeability, and the low strength on sites for local roads and streets. The effects of shrinking and swelling can be minimized by using proper engineering designs and by backfilling with material that has low shrink-swell potential. Roads and streets should be designed to offset the limited ability of the soil to support a load. Septic tank absorption fields may not function properly because of the restricted permeability. Enlarging the size of the absorption field or using an alternative method of waste disposal helps to overcome this limitation.

This map unit has good potential for openland and woodland wildlife habitat and very poor potential for wetland wildlife habitat. Habitat for deer, turkey, and squirrel can be improved by planting or encouraging the growth of oak trees and suitable understory plants.

Prescribed burning every three years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey. Habitat for wetland wildlife can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

The capability subclass is IVe. The woodland ordination symbol is 9C.

LsD—Luverne-Smithdale complex, 8 to 15 percent slopes

This map unit consists of the very deep, well drained Luverne and Smithdale soils. It is on side slopes of highly dissected uplands. The soils occur as areas so intricately intermingled that they could not be mapped separately at the scale selected for mapping. The Luverne soil makes up about 50 percent of the map unit, and the Smithdale soil makes up about 35 percent. Slopes generally are short and complex. Individual areas are irregular in shape. They range from 25 to more than 1,000 acres in size.

The Luverne soil is generally on the middle and lower parts of slopes. Typically, the surface layer is dark brown sandy loam about 9 inches thick. The subsoil extends to a depth of 42 inches. It is red clay in the upper part and yellowish red sandy clay loam in the lower part. The substratum, to a depth of 60 inches, is stratified reddish and grayish sandy clay loam, sandy loam, and loamy sand.

Important properties of the Luverne soil—

Permeability: Moderately slow
Available water capacity: High
Organic matter content: Low
Natural fertility: Low
Depth to bedrock: More than 60 inches
Root zone: More than 60 inches
Seasonal high water table: More than 6.0 feet deep
Shrink-swell potential: Moderate
Flooding: None

The Smithdale soil generally is on the upper parts of slopes and on narrow ridgetops. Typically, the surface layer is brown sandy loam about 7 inches thick. The subsurface layer, to a depth of 12 inches, is pale brown sandy loam. The subsoil extends to a depth of 60 inches. It is yellowish red sandy clay loam in the upper part and red sandy loam in the lower part.

Important properties of the Smithdale soil—

Permeability: Moderate in the upper part of the subsoil; moderately rapid in the lower part
Available water capacity: High
Organic matter content: Low
Natural fertility: Low
Depth to bedrock: More than 60 inches
Root zone: More than 60 inches
Seasonal high water table: More than 6.0 feet deep
Shrink-swell potential: Low
Flooding: None

Included in mapping are a few small areas of Iuka, Kinston, Sacul, and Savannah soils. Also included are areas of soils that are similar to the Smithdale soil, except that they have thick, sandy surface and subsurface layers. The moderately well drained Iuka and poorly drained Kinston soils are on narrow flood plains. Sacul soils are in landscape positions similar to those of the Luverne soil. They have grayish mottles in the upper part of the subsoil. Savannah soils are on narrow ridgetops. They have a fragipan. Included soils make up about 15 percent of the map unit. Individual areas generally are less than 5 acres in size.

Most areas of this map unit are used for woodland and for wildlife habitat. A few areas are used for pasture and hay.

This map unit is not suited to cultivated crops, mainly because the slopes are too steep and the hazard of erosion is too severe. The irregular slope and the low fertility are also management concerns.

This map unit is poorly suited to pasture and hay. The main management concerns are the slope, the low fertility, and a severe hazard of erosion. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture in good condition.

This map unit is well suited to loblolly pine. Other species that commonly grow in areas of these soils include shortleaf pine, longleaf pine, sweetgum, and water oak. On the basis of a 50-year site curve, the site index for loblolly pine is 90. The average annual growth of well stocked, even-aged, unmanaged stands of loblolly pine at 25 years of age is 2.2 cords per acre per year. The understory vegetation consists mainly of greenbrier, poison oak, little bluestem, honeysuckle, waxmyrtle, muscadine grape, American beautyberry, yellow jessamine, huckleberry, and flowering dogwood.

This map unit has moderate limitations affecting timber management. The main management concerns are a hazard of erosion, an equipment limitation, and plant competition. Exposing the surface by removing ground cover increases the hazard of erosion, including rill and gully erosion. Roads, landings, and skid trails can be protected against erosion by constructing diversions, mulching, and seeding. The slope restricts the use of equipment. Using standard wheeled and tracked equipment when the soils are wet results in

rutting and compaction. Plant competition reduces the growth of trees and can prevent adequate reforestation unless sites receive intensive preparation and maintenance. Site preparation can control the initial plant competition, and herbicides can be used to control the subsequent growth.

This map unit is poorly suited to most urban uses. It is generally not suitable as a site for buildings because of the slope. Other management concerns include the moderately slow permeability, the moderate shrink-swell potential, and the low strength of the Luverne soil.

This map unit has good potential for openland and woodland wildlife habitat and very poor potential for wetland wildlife habitat. Habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every three years, rotated among several tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey. Habitat for wetland wildlife can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

The capability subclass is VIe. The woodland ordination symbol is 9C in areas of the Luverne soil and 9A in areas of the Smithdale soil.

MaA—Myatt fine sandy loam, 0 to 1 percent slopes, occasionally flooded

This very deep, poorly drained soil is on low terraces adjacent to major streams throughout the county. It is subject to occasional flooding, usually in late winter and early spring. Most mapped areas are long and narrow, but some are broad. Individual areas range from 10 to more than 100 acres in size.

Typically, the surface layer is dark grayish brown fine sandy loam about 7 inches thick. The subsoil extends to a depth of 53 inches. It is light brownish gray clay loam that has brownish mottles in the upper part, gray clay loam that has brownish mottles in the next part, and gray sandy clay loam that has brownish and reddish mottles in the lower part. The substratum, to a depth of 72 inches, is light brownish gray sandy loam.

Important properties of the Myatt soil—

Permeability: Moderate
Available water capacity: High
Organic matter content: Medium
Natural fertility: Low
Depth to bedrock: More than 60 inches
Root zone: More than 60 inches
Seasonal high water table: Apparent, at the surface to a depth of 1.0 foot from January to April
Shrink-swell potential: Low
Flooding: Occasional, for brief periods from January through April

Included in mapping are a few small areas of Cahaba and Columbus soils. These included soils are in slightly higher, more convex positions than the Myatt soil. Cahaba soils are well drained and have reddish colors in the subsoil. Columbus soils are moderately well drained and have brownish colors in the subsoil. Included soils make up about 10 percent of the map unit. Individual areas generally are less than 5 acres in size.

Most areas of this map unit are used for woodland and for wildlife habitat. A few small areas are used for cultivated crops or pasture.

This map unit is poorly suited to cultivated crops, pasture, and hay. Wetness and the occasional flooding are the main management concerns. If cultivated crops are grown, a surface drainage system and protection from flooding are needed. If areas are used for pasture or hay, grasses that tolerate wet soil conditions should be selected. Common bermudagrass is suitable.

This map unit is suited to loblolly pine and hardwoods. Species of hardwoods that commonly grow in areas of this map unit include sweetgum, water oak, willow oak, swamp chestnut oak, and green ash. On the basis of a 50-year site curve, the site index for loblolly pine is 90. The average annual growth of well stocked, even-aged, unmanaged stands of loblolly pine at 25 years of age is 2.2 cords per acre per year. The understory vegetation consists mainly of red maple, water oak, green ash, sweetgum, panicums, sweetbay, greenbrier, switchcane, blackberry, Alabama supplejack, and ironwood.

This map unit has severe limitations affecting timber management. The main management concerns are the restricted use of equipment, the seedling mortality rate, and plant competition. The seasonal high water table and the flooding restrict the use of equipment to periods when the soil is dry. Using standard wheeled and tracked equipment when the soil is wet results in rutting and compaction. Using low-pressure ground equipment reduces damage to the soil and helps to maintain productivity. The high seedling mortality rate is caused by excessive wetness. It can be reduced by planting on beds, or it can be compensated for by increasing the number of trees planted. Plant competition reduces the growth of trees and can prevent adequate reforestation unless sites receive intensive preparation and maintenance. Site preparation can control the initial plant competition, and

herbicides can be used to control the subsequent growth.

This map unit is poorly suited to most urban uses. It has severe limitations affecting building sites, local roads and streets, and most kinds of sanitary facilities. The main management concerns are wetness and the occasional flooding. Although it is generally not feasible to control the flooding, pilings or mounds can elevate buildings above the expected level of flooding.

This map unit has fair potential for openland and woodland wildlife habitat and good potential for wetland wildlife habitat. Habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Habitat for wetland wildlife can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

The capability subclass is IVw. The woodland ordination symbol is 9W.

McA—Myatt-Columbus complex, 0 to 2 percent slopes, occasionally flooded

These very deep, poorly drained and moderately well drained soils are on low terraces that parallel the Tombigbee and Sipsey Rivers. They are subject to occasional flooding, usually in late winter and early spring. The soils occur as areas so intricately intermingled that they could not be mapped separately at the scale selected for mapping. The Myatt soil makes up about 50 percent of the map unit, and the Columbus soil makes up about 40 percent. Most mapped areas are oblong, but some are broad. Individual areas range from 10 to more than 1,000 acres in size.

The poorly drained Myatt soil is in flat or slightly concave positions between low ridges. Typically, the surface layer is dark grayish brown fine sandy loam about 4 inches thick. The subsurface layer, to a depth of 9 inches, is light brownish gray fine sandy loam. The subsoil extends to a depth of 50 inches. It is light brownish gray sandy clay loam that has brownish mottles in the upper part and is gray sandy clay loam that has brownish and reddish mottles in the lower part. The substratum, to a depth of 70 inches, is gray sandy loam.

Important properties of the Myatt soil—

Permeability: Moderate
Available water capacity: High
Organic matter content: Medium
Natural fertility: Low
Depth to bedrock: More than 60 inches
Root zone: More than 60 inches
Seasonal high water table: Apparent, at the surface to a depth of 1.0 foot from January to April
Shrink-swell potential: Low
Flooding: Occasional, for brief periods from January through April

The moderately well drained Columbus soil is on slightly convex, low ridges. Typically, the surface layer is dark grayish brown loam about 4 inches thick. The subsurface layer, to a depth of 8 inches, is light yellowish brown sandy loam. The subsoil extends to a depth of 44 inches. It is yellowish brown clay loam in the upper part and mottled yellowish brown, light brownish gray, and yellowish red loam in the lower part. The substratum, to a depth of 65 inches, is mottled light brownish gray and yellowish brown sandy loam.

Important properties of the Columbus soil—

Permeability: Moderate
Available water capacity: High
Organic matter content: Low
Natural fertility: Low
Depth to bedrock: More than 60 inches
Root zone: More than 60 inches
Seasonal high water table: Apparent, at a depth of 2.0 to 3.0 feet from January to April
Shrink-swell potential: Low
Flooding: Occasional, for brief periods from January through April

Included in mapping are a few small areas of Annemaine, Cahaba, and Kinston soils. Annemaine and Cahaba soils are in slightly higher, more convex positions than the Columbus and Myatt soils. Annemaine soils have a reddish, clayey subsoil. Cahaba soils have a reddish, loamy subsoil. The poorly drained Kinston soils are in narrow drainageways and are subject to frequent flooding. Included soils make up about 10 percent of the map unit. Individual areas generally are less than 5 acres in size.

Most areas of this map unit are used for woodland. A few small areas are used for cultivated crops, pasture, or hay.

This map unit is poorly suited to cultivated crops, pasture, and hay. Wetness and the occasional flooding are the main management concerns. If cultivated crops are grown, a surface drainage system and protection from flooding are needed. If areas are used for pasture or hay, grasses that tolerate wet soil conditions should be selected. Common bermudagrass is suitable.

This map unit is well suited to loblolly pine and hardwoods. Species of hardwoods that commonly grow in areas of this map unit include sweetgum, yellow-poplar, water oak, willow oak, swamp chestnut oak,

cherrybark oak, and green ash. On the basis of a 50-year site curve, the site index for loblolly pine is 90 in areas of the Myatt soil and 95 in areas of the Columbus soil. The average annual growth of well stocked, even-aged, unmanaged stands of loblolly pine at 25 years of age is 2.2 cords per acre per year in areas of the Myatt soil and 2.5 cords per acre per year in areas of the Columbus soil. The understory vegetation consists mainly of red maple, water oak, green ash, sweetgum, longleaf uniola, panicums, switchcane, waxmyrtle, greenbrier, poison ivy, and blackberry.

This map unit has moderate and severe limitations affecting timber management. The main management concerns are the restricted use of equipment and plant competition. The seasonal high water table and the flooding restrict the use of equipment to periods when the soils are dry. Using standard wheeled and tracked equipment when the soils are wet results in rutting and compaction. Using low-pressure ground equipment reduces damage to the soils and helps to maintain productivity. Plant competition reduces the growth of trees and can prevent adequate reforestation unless sites receive intensive preparation and maintenance. Site preparation can control the initial plant competition, and herbicides can be used to control the subsequent growth.

This map unit is poorly suited to most urban uses. It has moderate and severe limitations affecting building sites, local roads and streets, and most kinds of sanitary facilities. The main management concerns are wetness and the occasional flooding. Although it is generally not feasible to control the flooding, pilings or mounds can elevate buildings above the expected level of flooding.

This map unit has fair potential for wetland wildlife habitat and good potential for openland and woodland wildlife habitat. Habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Habitat for wetland wildlife can be improved by constructing or maintaining shallow ponds that provide open water areas for waterfowl and furbearers.

The capability subclass is IVw in areas of the Myatt soil and IIw in areas of the Columbus soil. The woodland ordination symbol is 9W in areas of the Myatt soil and 10W in areas of the Columbus soil.

OcA—Ochlockonee-Kinston-Iuka complex, 0 to 2 percent slopes, frequently flooded

This map unit consists of the very deep, well drained Ochlockonee soil, the poorly drained Kinston soil, and the moderately well drained Iuka soil on the flood plains along the Sipsey River. These soils are subject to frequent flooding of brief duration. The soils occur as areas so intricately intermingled that they could not be mapped separately at the scale selected for mapping. The Ochlockonee soil makes up about 45 percent of the map unit, the Kinston soil makes up about 30 percent, and the Iuka soil makes up about 20 percent. Individual areas are long and narrow. They range from 10 to 1000 acres in size.

The Ochlockonee soil is on high parts of the natural levee. Typically, the surface layer is dark brown and brown sandy loam about 11 inches thick. The substratum extends to a depth of 65 inches. It is yellowish brown sandy loam in the upper part and yellowish brown loamy sand in the lower part.

Important properties of the Ochlockonee soil—

Permeability: Moderate
Available water capacity: Moderate
Organic matter content: Low
Natural fertility: Medium
Depth to bedrock: More than 60 inches
Root zone: More than 60 inches
Seasonal high water table: Apparent, at a depth of 3.0 to 5.0 feet from January to April
Shrink-swell potential: Low
Flooding: Frequent, for brief periods from January through April

The Kinston soil is in flat to concave positions at the lowest elevations on the flood plain. Typically, the surface layer is dark brown loam about 4 inches thick. The substratum extends to a depth of 68 inches. It is gray silt loam that has brownish mottles in the upper part, gray silty clay loam that has brownish mottles in the next part, and stratified grayish brown loamy sand, sand, and sandy loam in the lower part.

Important properties of the Kinston soil—

Permeability: Moderate
Available water capacity: High
Organic matter content: Medium
Natural fertility: Medium
Depth to bedrock: More than 60 inches
Root zone: More than 60 inches
Seasonal high water table: Apparent, at the surface to a depth of 1.0 foot from January to June
Shrink-swell potential: Low
Flooding: Frequent, for brief periods from January through April

The Iuka soil is on intermediate parts of the natural levee. Typically, the surface layer is dark brown silt loam and loam about 10 inches thick. The substratum

extends to a depth of 60 inches. It is pale brown sandy loam in the upper part, light brownish gray sandy loam in the next part, and light brownish gray loamy sand in the lower part.

Important properties of the Iuka soil—

Permeability: Moderate
Available water capacity: Moderate
Organic matter content: Low
Natural fertility: Medium
Depth to bedrock: More than 60 inches
Root zone: More than 60 inches
Seasonal high water table: Apparent, at a depth of 1.0 to 3.0 feet from January to April
Shrink-swell potential: Low
Flooding: Frequent, for brief periods from January through April

Included in mapping are a few small areas of Bigbee, Cahaba, and Columbus soils. Bigbee soils are on the high parts of natural levees and are sandy throughout. Cahaba and Columbus soils are in slightly higher positions on low terraces adjacent to areas of the Ochlockonee, Kinston, and Iuka soils. Cahaba soils have reddish colors in the subsoil. Columbus soils have brownish colors in the subsoil. Also included are small areas of Fluvaquents in depressions that are ponded for long periods. Included soils make up about 5 percent of the map unit. Individual areas generally are less than 5 acres in size.

Most areas of this map unit are used for woodland and for wildlife habitat. A few areas are used for pasture and hay.

This map unit is poorly suited to cultivated crops. The frequent flooding is the main management concern. If cultivated crops are grown, protection from flooding is needed.

These soils are suited to pasture and hay. The frequent flooding is the main management concern. Scouring and deposition by fast-flowing water may damage crops and structures. Proper stocking rates, pasture rotation, and restricted grazing during very wet periods help to keep the pasture in good condition. Applications of lime and fertilizer improve the fertility of the soil and increase the growth of forage plants.

These soils are well suited to loblolly pine and hardwoods. Species of hardwood that commonly grow in areas of these soils include yellow-poplar, water oak, American sycamore, green ash, eastern cottonwood, and sweetgum. On the basis of a 50-year site curve, the site index for loblolly pine is 100. The average annual growth of well stocked, even-aged, unmanaged stands of loblolly pine is 2.7 cords per acre per year. The understory vegetation consists mainly of greenbrier, blackberry, panicums, poison ivy, Alabama supplejack, red maple, sweetgum, sweetbay, and water oak.

These soils have moderate and severe limitations affecting timber management. The main management concerns are the restricted use of equipment, the seedling mortality rate, and plant competition and flooding and wetness in late winter and in spring. Harvesting activities should be planned for summer and fall to avoid the delays and damage caused by the flooding. The flooding and the accompanying scouring and deposition result in increased seedling mortality, which can be compensated for by increasing the number of trees planted. Plant competition reduces the growth of trees and can prevent adequate reforestation unless sites receive adequate preparation and maintenance. Site preparation can control the initial plant competition, and herbicides can be used to control the subsequent growth.

This map unit is not suited to most urban uses. The flooding is the main hazard. Although it is generally not feasible to control the flooding, pilings or mounds can elevate buildings above the expected level of flooding.

The Ochlockonee and Iuka soils have fair potential for openland wildlife habitat and good potential for woodland wildlife habitat. The Kinston soil has poor potential for openland and woodland wildlife habitat. The potential for wetland wildlife habitat is fair in areas of the Kinston soil and poor in areas of the Ochlockonee and Iuka soils. Habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Habitat for wetland wildlife can also be improved by constructing shallow ponds that provide open water for waterfowl and furbearers.

The capability subclass is Vw. The woodland ordination symbol is 11W.

OkA—Okolona silty clay, 0 to 1 percent slopes

This very deep, moderately well drained soil is on broad ridgetops in the uplands of the Blackland Prairie. Slopes are long and smooth. Individual areas are irregular in shape. They range from 10 to 350 acres in size.

Typically, the surface layer is very dark grayish brown silty clay about 4 inches thick. The next layer, to a depth of 16 inches, is black clay. The subsoil is also clay and extends to a depth of 65 inches. It is olive gray in the upper part and mottled olive, olive gray, olive brown, and dark yellowish brown in the lower part. Soft masses and nodules of calcium carbonate are throughout the profile.

Important properties of the Okolona soil—

Permeability: Very slow
Available water capacity: High
Organic matter content: Medium
Natural fertility: High
Depth to bedrock: More than 60 inches
Root zone: More than 60 inches
Seasonal high water table: Perched, at a depth of 4.0 to 6.0 feet from January to April
Shrink-swell potential: High
Flooding: None

Included in mapping are a few small areas of Sucarnoochee, Sumter, and Vaiden soils. The somewhat poorly drained Sucarnoochee soils are on narrow flood plains. Sumter soils are in higher positions than the Okolona soil. They do not have thick, dark-colored surface and subsurface layers. Vaiden soils are in slightly lower positions than the Okolona soil. They do not have thick, dark-colored surface layers and are acid in the upper part of the solum. Included soils make up about 10 percent of the map unit. Individual areas generally are less than 5 acres in size.

Most areas of this map unit are used for cultivated crops. A few areas are used for pasture and hay.

This map unit is well suited to most cultivated crops. The main limitation is poor tilth. This soil can be worked only within a narrow range of moisture content. It becomes cloddy if tilled when too wet or too dry. Returning all crop residue to the soil improves tilth, reduces crusting, and increases the available water capacity.

This map unit is well suited to pasture and hay. Tall fescue, dallisgrass, and bahiagrass are the most commonly grown grasses. The seedbed should be prepared on the contour or across the slope. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture in good condition. Applications of lime and fertilizer improve the fertility of the soil and increase the production of forage.

This map unit is suited to eastern redcedar and hardwoods. Species other than eastern redcedar that commonly grow in areas of this soil include sugarberry and pecan. On the basis of a 50-year site curve, the site index for eastern redcedar is 40. The average annual growth of well stocked, even-aged, unmanaged stands of eastern redcedar at 40 years of age is 140 board feet per acre per year. The understory vegetation consists mainly of panicums, Johnsongrass, blackberry, MaCartney rose, winged elm, osageorange, broomsedge bluestem, and hawthorns.

This map unit has moderate limitations affecting timber management. The main management concerns are the restricted use of equipment, the seedling mortality rate, and plant competition. The clayey texture of the surface layer and subsoil restricts the use of equipment, especially during rainy periods. Using standard wheeled and tracked equipment when the soil is wet results in rutting and compaction. Using low-pressure ground equipment reduces damage to the soil and helps to maintain productivity. Harvesting and management activities should be planned for seasons when the soil is dry. Planting rates can be increased to compensate for the high rate of seedling mortality. Plant competition reduces the growth of trees and can prevent adequate reforestation unless sites receive intensive preparation and maintenance. Site preparation can control the initial plant competition, and herbicides can be used to control the subsequent growth.

This map unit is poorly suited to most urban uses. It has severe limitations affecting building sites, local roads and streets, and most kinds of sanitary facilities. The main management concerns are the high shrink-swell potential, the very slow permeability, and low strength on sites for roads and streets. If excavations are made, the cutbanks cave easily. Support beams should be used to maintain the stability of cutbanks. Properly designing foundations and footings and diverting runoff away from the buildings help to prevent the structural damage that results from shrinking and swelling. Special design is needed for roads and streets to compensate for the instability of the subsoil. Septic tank absorption fields do not function properly because of the very slow permeability. An alternate method is needed to dispose of sewage properly.

This map unit has good potential for openland and woodland wildlife habitat and poor potential for wetland wildlife habitat. Habitat for deer, turkey, and squirrel can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Habitat for openland wildlife can be improved by planting grasses and other seed-producing plants around cropland and pasture. Habitat for wetland wildlife can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

The capability subclass is IIs. The woodland ordination symbol is 3C.

OkB—Okolona silty clay, 1 to 3 percent slopes

This very deep, moderately well drained soil is on broad ridgetops in the uplands of the Blackland Prairie. Slopes are long and smooth. Individual areas are

irregular in shape. They range from 10 to 300 acres in size.

Typically, the surface layer is very dark grayish brown silty clay about 6 inches thick. The next layer, to a depth of 22 inches, is black clay. The subsoil is also clay and extends to a depth of 65 inches. It is olive gray in the upper part and mottled olive gray, olive brown, and olive in the lower part. Soft masses and nodules of calcium carbonate are throughout the profile.

Important properties of the Okolona soil—

Permeability: Very slow
Available water capacity: High
Organic matter content: Medium
Natural fertility: High
Depth to bedrock: More than 60 inches
Root zone: More than 60 inches
Seasonal high water table: Perched, at a depth of 4.0 to 6.0 feet from January to April
Shrink-swell potential: High
Flooding: None

Included in mapping are a few small areas of Sucarnoochee, Sumter, and Vaiden soils. The somewhat poorly drained Sucarnoochee soils are on narrow flood plains. Sumter soils are in higher positions than the Okolona soil. They do not have thick, dark-colored surface and subsurface layers. Vaiden soils are in slightly lower positions than the Okolona soil. They do not have thick, dark-colored surface layers and are acid in the upper part of the solum. Included soils make up about 10 percent of the map unit. Individual areas generally are less than 5 acres in size.

Most areas of this map unit are used for cultivated crops. A few areas are used for pasture and hay.

This map unit is well suited to most cultivated crops. The main limitation is poor tilth. Erosion is a moderate hazard if this soil is cultivated. This soil can be worked only within a narrow range of moisture content. It becomes cloddy if tilled when too wet or too dry. Conservation tillage, contour farming, and cover crops help to reduce the runoff rate and control erosion. Returning all crop residue to the soil improves tilth, reduces crusting, and increases the available water capacity.

This map unit is well suited to pasture and hay. Tall fescue, dallisgrass, and bahiagrass are the most commonly grown grasses. The seedbed should be prepared on the contour or across the slope. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture in good condition. Applications of lime and fertilizer improve the fertility of the soil and increase the production of forage.

This map unit is suited to eastern redcedar and hardwoods. Species other than eastern redcedar that commonly grow in areas of this soil include sugarberry and pecan. On the basis of a 50-year site curve, the site index for eastern redcedar is 40. The average annual growth of well stocked, even-aged, unmanaged stands of eastern redcedar at 40 years of age is 140 board feet per acre per year. The understory vegetation consists mainly of panicums, Johnsongrass, blackberry, MaCartney rose, winged elm, osageorange, broomsedge bluestem, and hawthorns.

This map unit has moderate limitations affecting timber management. The main management concerns are the restricted use of equipment, the seedling mortality rate, and plant competition. The clayey texture of the surface layer and subsoil restricts the use of equipment, especially during rainy periods. Using standard wheeled and tracked equipment when the soil is wet results in rutting and compaction. Using low-pressure ground equipment reduces damage to the soil and helps to maintain productivity. Harvesting and management activities should be planned for seasons when the soil is dry. Planting rates can be increased to compensate for the high rate of seedling mortality. Plant competition reduces the growth of trees and can prevent adequate reforestation unless sites receive intensive preparation and maintenance. Site preparation can control the initial plant competition, and herbicides can be used to control the subsequent growth.

This map unit is poorly suited to most urban uses. It has severe limitations affecting building sites, local roads and streets, and most kinds of sanitary facilities. The main management concerns are the high shrink-swell potential, the very slow permeability, and low strength on sites for roads and streets. If excavations are made, the cutbanks cave easily. Support beams should be used to maintain the stability of cutbanks. Properly designing foundations and footings and diverting runoff away from the buildings help to prevent the structural damage that results from shrinking and swelling. Special design is needed for roads and streets to compensate for the instability of the subsoil. Septic tank absorption fields do not function properly because of the very slow permeability. An alternate method is needed to dispose of sewage properly.

This map unit has good potential for openland and woodland wildlife habitat and poor potential for wetland wildlife habitat. Habitat for deer, turkey, and squirrel can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Habitat for

openland wildlife can be improved by planting grasses and other seed-producing plants around cropland and pasture. Habitat for wetland wildlife can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

The capability subclass is IIe. The woodland ordination symbol is 3C.

Pt—Pits

This map unit consists of open excavations from which the original soil and underlying material have been removed for use at another location. Pits are scattered throughout the county, primarily in the Coastal Plain area. Individual areas generally are rectangular and range from 2 to 50 acres in size.

In upland areas, this map unit is mainly in areas where Bama, Lucedale, Luverne, and Smithdale soils have been removed to a depth of 5 to 25 feet. In these areas, this map unit has been used as a source of construction material for highways and foundations and for fill material. On low stream terraces, this map unit is mainly in areas where Bigbee, Cahaba, and Columbus soils have been removed to a depth of 5 to 15 feet. In these areas, this map unit has been used as a source of sand and gravel.

Included in mapping are a few small areas of undisturbed soils along the edges of mapped areas, areas that are ponded for long periods, and areas of abandoned pits. The abandoned areas consist of pits and spoil banks that are 10 to 25 feet high. The surface of these areas generally is a mixture of coarse sand and gravel. Reaction is extremely acid or very strongly acid.

Most areas of this map unit do not support vegetation. A few low-quality trees and sparse stands of grass are in some of the abandoned pits. This map unit is unsuited to most uses. Extensive reclamation efforts are required to make areas suitable as cropland, pasture, or woodland or as a site for urban development. Onsite investigation and testing are needed to determine the suitability of this unit for any uses.

The capability subclass is VIIIs. This unit has not been assigned a woodland ordination symbol.

RvA—Riverview loam, 0 to 2 percent slopes, frequently flooded

This very deep, well drained soil is on the high parts of the natural levee parallel to the Tombigbee River. It is subject to flooding for brief periods several times each year, usually in winter and spring. Individual areas generally are long and narrow. They range from 10 to 100 acres in size.

Typically, the surface layer is very dark grayish brown loam about 6 inches thick. The subsoil extends to a depth of 51 inches. It is dark brown loam in the upper part, dark yellowish brown loam in the next part, and strong brown and yellowish brown sandy clay loam in the lower part. The substratum, to a depth of 65 inches, is yellowish brown sandy loam.

Important properties of the Riverview soil—

Permeability: Moderate
Available water capacity: High
Organic matter content: Low
Natural fertility: Medium
Depth to bedrock: More than 60 inches
Root zone: More than 60 inches
Seasonal high water table: Apparent, at a depth of 3.0 to 5.0 feet from January to April
Shrink-swell potential: Low
Flooding: Frequent, for brief periods from January through April

Included in mapping are a few small areas of Bigbee, Mooreville, and Urbo soils. Bigbee soils are in slightly higher positions on the landscape than the Riverview soil. They are sandy throughout. Mooreville soils are in slightly lower positions than the Riverview soil. They have grayish mottles in the upper part of the subsoil. Urbo soils are in lower positions than the Riverview soil. They have a clayey subsoil. Included soils make up about 10 percent of the map unit. Individual areas generally are less than 5 acres in size.

Most areas of this map unit are used for woodland and for wildlife habitat. A few small areas are used for pasture and hay.

This map unit is poorly suited to cultivated crops. The hazard of flooding is the main management concern. The flooding occurs mainly in late winter and early spring but can occur throughout the year. Although crops can be grown in most years, the flooding delays planting or damages crops in some years. Crops and drainage ditches may be damaged or destroyed due to scouring and deposition by fast-flowing floodwater.

This map unit is suited to pasture and hay. The main management concern is the frequent flooding. Cattle or other livestock need to be moved to higher areas during flood periods. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture in good condition.

This map unit is well suited to loblolly pine and hardwoods. Species of hardwood that commonly grow in areas of this soil include sweetgum, yellow-poplar, cherrybark oak, water oak, willow oak, American

sycamore, sugarberry, eastern cottonwood, and green ash. On the basis of a 50-year site curve, the site index for loblolly pine is 100. The average annual growth of well stocked, even-aged, unmanaged stands of loblolly pine at 25 years of age is 2.7 cords per acre per year. The understory vegetation consists mainly of carpetgrass, longleaf uniola, panicums, blackberry, dwarf palmetto, red maple, Alabama supplejack, green ash, and winged elm.

This map unit has moderate limitations affecting timber management. The main management concerns are the restricted use of equipment and plant competition. The seasonal high water table and the flooding restrict the use of equipment to periods when the soil is dry. Using standard wheeled and tracked equipment when the soil is wet results in rutting and compaction. Using low-pressure ground equipment reduces damage to the soil and helps to maintain productivity. Plant competition reduces the growth of trees and can prevent adequate reforestation unless sites receive intensive preparation and maintenance. Site preparation can control the initial plant competition, and herbicides can be used to control subsequent growth.

This map unit is not suited to most urban uses. The major hazard is the frequent flooding. Although it is generally not feasible to control the flooding, pilings or well-compacted fill can elevate buildings above the expected level of flooding.

This map unit has good potential for openland and woodland wildlife habitat and fair potential for wetland wildlife habitat. Habitat for openland and woodland wildlife can be improved by planting or encouraging the growth of oak trees and suitable understory plants. Habitat for wetland wildlife can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

The capability subclass is IIIw. The woodland ordination symbol is 11A.

SaC—Sacul sandy loam, 2 to 8 percent slopes

This very deep, moderately well drained soil is on narrow ridgetops and the upper parts of side slopes in the uplands. Slopes generally are short and complex. Individual areas are irregular in shape. They range from 5 to more than 100 acres in size.

Typically, the surface layer is brown sandy loam about 5 inches thick. The subsoil is clay and extends to a depth of 42 inches. It is yellowish red in the upper part, mottled strong brown and light gray in the next part, and mottled red, yellowish red, and light brownish gray in the lower part. The substratum, to a depth of 65 inches, is mottled gray, light yellowish brown, and brownish yellow clay loam.

Important properties of the Sacul soil—

Permeability: Slow
Available water capacity: High
Organic matter content: Low
Natural fertility: Low
Depth to bedrock: More than 60 inches
Root zone: More than 60 inches
Seasonal high water table: Perched, at a depth of 2.0 to 4.0 feet from January to April
Shrink-swell potential: Moderate
Flooding: None

Included in mapping are a few small areas of Luverne and Smithdale soils. Luverne soils are on the higher parts of slopes. They do not have grayish mottles in the upper part of the subsoil. Smithdale soils are on knolls and the higher parts of ridgetops. They are loamy throughout the subsoil. Included soils make up about 10 percent of the map unit. Individual areas generally are less than 5 acres in size.

Most areas of this map unit are used for woodland. A few small areas are used for cultivated crops, pasture, or hay.

This map unit is poorly suited to cultivated crops. The main management concerns are the short, complex slopes; the low fertility; and a severe hazard of erosion. Gullies form readily in areas that have a concentrated flow of water on the surface. Conservation tillage, contour farming, and cover crops reduce the runoff rate and help to control erosion. Returning all crop residue to the soil or regularly adding other organic matter improves fertility and helps to maintain tilth and the content of organic matter. Most crops respond well to additions of lime and fertilizer.

This map unit is well suited to pasture and hay. The main management concerns are the low fertility and a severe hazard of erosion. Coastal bermudagrass and bahiagrass are the most commonly grown grasses. Tillage should be on the contour or across the slope if practical. Proper stocking rates, pasture rotation, and restricted grazing during prolonged wet or dry periods help to keep the pasture in good condition. Applications of lime and fertilizer improve the fertility of the soil and promote the growth of forage plants.

This map unit is well suited to loblolly pine. Other species that commonly grow in areas of this soil include longleaf pine, shortleaf pine, sweetgum, and water oak. On the basis of a 50-year site curve, the site index for loblolly pine is 90. The average annual growth of well stocked, even-aged, unmanaged stands of loblolly pine at 25 years of age is 2.2 cords per acre per year. The understory vegetation consists mainly of

little bluestem, panicums, brackenfern, sumac, poison oak, greenbrier, huckleberry, and flowering dogwood.

This map unit has moderate limitations affecting timber management. The main management concerns are the restricted use of equipment and plant competition. The low strength of the clayey subsoil restricts the use of equipment when the soil is wet. Using standard wheeled and tracked equipment when the soil is wet results in rutting and compaction. Using low-pressure ground equipment reduces damage to the soil and helps to maintain productivity. Plant competition reduces the growth of trees and can prevent adequate reforestation unless sites receive intensive preparation and maintenance. Site preparation practices, such as chopping, burning, and applying herbicides, help to control the initial plant competition and facilitate mechanical planting.

This map unit is poorly suited to most urban uses. It has moderate limitations affecting building sites and severe limitations affecting local roads and streets and most kinds of sanitary facilities. The main management concerns are the slow permeability, wetness, the moderate shrink-swell potential, and low strength on sites for local roads and streets. Properly designing foundations and footings and diverting runoff away from the buildings help to prevent the structural damage that results from shrinking and swelling. Septic tank absorption fields do not function properly during rainy periods because of the slow permeability and the seasonal high water table. An alternative method of sewage disposal is needed to dispose of sewage properly.

This map unit has good potential for openland and woodland wildlife habitat and poor potential for wetland wildlife habitat. Habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the establishment of desirable plants. Prescribed burning every three years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.

The capability subclass is IVe. The woodland ordination symbol is 9C.

ShA—Savannah loam, 0 to 2 percent slopes

This very deep, moderately well drained soil is on narrow to broad ridgetops on high terraces and in uplands. Slopes generally are long and smooth. Individual areas generally are irregular in shape. They range from 5 to more than 500 acres in size.

Typically, the surface layer is dark grayish brown loam about 7 inches thick. The subsurface layer, to a depth of 12 inches, is brown loam. The subsoil, to a depth of 26 inches, is yellowish brown loam. The next layer, to a depth of 65 inches, is a fragipan that is yellowish brown loam in the upper part and yellowish brown clay loam in the lower part.

Important properties of the Savannah soil—

Permeability: Moderately slow
Available water capacity: Moderate
Organic matter content: Low
Natural fertility: Low
Depth to bedrock: More than 60 inches
Root zone: 20 to 36 inches
Seasonal high water table: Perched, at a depth of 1.5 to 3.0 feet from January to April
Shrink-swell potential: Low
Flooding: None

Included in mapping are a few small areas of Bama, Myatt, and Smithdale soils. Bama soils are on slightly higher knolls than the Savannah soil or are on more convex slopes. They have reddish colors in the subsoil. Myatt soils are in shallow depressions and are poorly drained. Smithdale soils are on the lower parts of slopes. They have a reddish subsoil. Included soils make up about 10 percent of the map unit. Individual areas generally are less than 5 acres in size.

Most areas of this map unit are used for cultivated crops, pasture, or hay. A few areas are used as homesites, and a few other areas are wooded.

This map unit is well suited to cultivated crops. It has few limitations affecting this use. Tillage should be on the contour or across the slope. Maintaining crop residue on or near the surface helps to control runoff and maintains tilth and the content of organic matter. Most crops respond well to systematic applications of lime and fertilizer.

This map unit is well suited to pasture and hay (fig. 5). It has few limitations affecting these uses. Coastal bermudagrass and bahiagrass are the most commonly grown grasses. Applications of lime and fertilizer improve the fertility of the soil and increase the production of forage and hay. Proper stocking rates, pasture rotation, and restricted grazing during very wet or dry periods help to keep the pasture in good condition.

This map unit is well suited to loblolly pine. Other species that commonly grow in areas of this soil include longleaf pine, sweetgum, and water oak. On the basis of a 50-year site curve, the site index for loblolly pine is 85. The average annual growth of well stocked, even-aged, unmanaged stands of loblolly pine at 25 years of age is 2.1 cords per acre per year. The understory vegetation consists mainly of little bluestem, yellow jessamine, panicums, flowering

Figure 5.—Coastal bermudagrass hay in an area of Savannah loam, 0 to 2 percent slopes. This moderately well drained soil is well suited to hay and pasture.

dogwood, southern red oak, sweetgum, and huckleberry.

This map unit has few limitations affecting timber management. Soil compaction and plant competition are minor management concerns. Harvesting during the drier periods helps to prevent compaction. Using proper site preparation and spraying, cutting, or girdling can eliminate unwanted weeds, brush, and trees.

This map unit is well suited to most urban uses. It has moderate limitations affecting building sites and local roads and streets and moderate and severe limitations affecting most kinds of sanitary facilities. The main management concerns are wetness and the moderately slow permeability. A subsurface drainage system can help to lower the water table. Septic tank absorption fields do not function properly during rainy periods because of the wetness and the moderately slow permeability. Enlarging the size of the absorption field helps to overcome these limitations.

This map unit has good potential for openland and woodland wildlife habitat and very poor potential for wetland wildlife habitat. Habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every three years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey. Leaving undisturbed areas of vegetation around cropland and pasture provides food and rest areas that improve habitat for openland wildlife.

The capability subclass is IIw. The woodland ordination symbol is 8W.

ShB—Savannah loam, 2 to 5 percent slopes

This very deep, moderately well drained soil is on side slopes of high stream terraces. Slopes generally are long and smooth. Individual areas are irregular in shape. They range from 10 to 150 acres in size.

Typically, the surface layer is dark grayish brown loam about 7 inches thick. The subsurface layer, to a depth of 12 inches is brown loam. The subsoil, to a

depth of 26 inches, is yellowish brown loam. The next layer, to a depth of 65 inches, is a fragipan that is yellowish brown loam in the upper part and yellowish brown clay loam in the lower part.

Important properties of the Savannah soil—

Permeability: Moderately slow
Available water capacity: Moderate
Organic matter content: Low
Natural fertility: Low
Depth to bedrock: More than 60 inches
Root zone: 20 to 30 inches
Seasonal high water table: Perched, at a depth of 1.5 to 3.0 feet from January to April
Shrink-swell potential: Low
Flooding: None

Included in mapping are a few small areas of Bama, Luverne, Myatt, and Smithdale soils. Bama soils are in landscape positions similar to those of the Savannah soil. They have reddish colors in the subsoil and do not have a fragipan. Luverne and Smithdale soils are on the lower parts of slopes. Luverne soils are clayey in the upper part of the subsoil. Smithdale soils have a reddish subsoil and do not have a fragipan. The poorly drained Myatt soils are in shallow depressions. They have grayish colors in the subsoil. Included soils make up about 10 percent of the map unit. Individual areas generally are less than 5 acres in size.

Most areas of this map unit are used for cultivated crops, pasture, or hay. A few areas are used for woodland or for homesites.

This map unit is well suited to cultivated crops. The main management concerns are the low fertility and a moderate hazard of erosion. Conservation tillage, terraces, contour farming, and cover crops reduce the runoff rate and help to control erosion. Using minimum tillage and returning all crop residue to the soil or regularly adding other organic matter help improve and maintain tilth and the content of organic matter. Crops respond well to systematic applications of lime and fertilizer.

This map unit is well suited to pasture and hay. It has few limitations affecting these uses. Coastal bermudagrass and bahiagrass are the most commonly grown grasses. Proper stocking rates, pasture rotation, and restricted grazing during prolonged wet or dry periods help to keep the pasture in good condition. Applications of lime and fertilizer improve the fertility of the soil and increase the production of forage.

This map unit is well suited to loblolly pine. Other species that commonly grow in areas of this soil include longleaf pine, shortleaf pine, sweetgum, and water oak. On the basis of a 50-year site curve, the site index for loblolly pine is 85. The average annual growth of well stocked, even-aged, unmanaged stands of loblolly pine at 25 years of age is 2.1 cords per acre per year. The understory vegetation consists mainly of little bluestem, flowering dogwood, poison ivy, greenbrier, yellow jessamine, panicums, oak, and hickory.

This map unit has few limitations affecting timber management. Soil compaction and plant competition are minor management concerns. Harvesting during the drier periods helps to prevent compaction. Carefully managed reforestation helps to control competition from undesirable understory plants. Site preparation practices, such as chopping, burning, and applying herbicides, help to control initial plant competition and facilitate mechanical planting.

This map unit is well suited to most urban uses. It has moderate limitations affecting building sites and local roads and streets and has moderate and severe limitations affecting most kinds of sanitary facilities. The main management concerns are wetness and the moderately slow permeability. A subsurface drainage system can help to lower the water table. Septic tank absorption fields do not function properly during rainy periods because of the wetness and the moderately slow permeability. Enlarging the size of the absorption field helps to overcome these limitations.

This map unit has good potential for openland and woodland wildlife habitat and very poor potential for wetland wildlife habitat. Habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the establishment of desirable plants. Prescribed burning every three years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey. Leaving undisturbed areas of vegetation around cropland and pasture provides food and rest areas that improve habitat for openland wildlife, such as red fox, rabbits, quail, and songbirds.

The capability subclass is IIe. The woodland ordination symbol is 8W.

SmC—Smithdale sandy loam, 5 to 8 percent slopes

This very deep, well drained soil is on narrow ridgetops and on side slopes in the uplands. Slopes generally are short and complex but are long and smooth in some areas. Individual areas are irregular in shape. They range from 5 to more than 300 acres in size.

Typically, the surface layer is yellowish brown sandy loam about 7 inches thick. The subsoil extends to a depth of 65 inches. It is yellowish red clay loam and

loam in the upper part, red loam and sandy clay loam in the next part, and red sandy loam in the lower part.

Important properties of the Smithdale soil—

Permeability: Moderate
Available water capacity: High
Organic matter content: Low
Natural fertility: Low
Depth to bedrock: More than 60 inches
Root zone: More than 60 inches
Seasonal high water table: More than 6.0 feet deep
Shrink-swell potential: Low
Flooding: None

Included in mapping are a few small areas of Bama, Kinston, Luverne, and Savannah soils. Bama soils are in positions similar to those of the Smithdale soils. The subsoil of the Bama soils does not have a significant decrease in content of clay within a depth of 60 inches. The poorly drained Kinston soils are in narrow drainageways. Luverne soils are on the lower parts of slopes. They are clayey in the upper part of the subsoil. Savannah soils are on the slightly higher parts of ridges and on the upper parts of slopes. They have a fragipan. Included soils make up about 10 percent of the map unit. Individual areas generally are less than 5 acres in size.

Most areas of this map unit are used for woodland, pasture, or hay. Some areas are used for cultivated crops, and a few areas are used as homesites.

This map unit is suited to cultivated crops. The main management concerns are the short, complex slopes; the low fertility; and a severe hazard of erosion. Gullies form readily in areas that have a concentrated flow of water on the surface. Sheet and rill erosion occur in most areas, and large gullies are common. Conservation tillage, terraces, contour farming, and cover crops reduce the runoff rate and help to control erosion. Installing drop-inlet structures in grassed waterways helps to prevent gullying. Returning all crop residue to the soil or regularly adding other organic matter improves fertility and helps to maintain tilth and the content of organic matter. Most crops respond well to additions of lime and fertilizer.

This map unit is well suited to pasture and hay. The main management concerns are the low fertility and a severe hazard of erosion. Coastal bermudagrass and bahiagrass are the most commonly grown grasses. Tillage should be on the contour or across the slope if practical. Proper stocking rates, pasture rotation, and restricted grazing during prolonged wet or dry periods help to keep the pasture in good condition. Applications of lime and fertilizer improve the fertility of the soil and promote the growth of forage plants.

This map unit is well suited to loblolly pine. Other species that commonly grow in areas of this soil include longleaf pine, shortleaf pine, sweetgum, and water oak. On the basis of a 50-year site curve, the site index for loblolly pine is 90. The average annual growth of well stocked, even-aged, unmanaged stands of loblolly pine at 25 years of age is 2.2 cords per acre per year. The understory vegetation consists mainly of little bluestem, panicums, sumac, greenbrier, huckleberry, sweetgum, common persimmon, and flowering dogwood.

This map unit has few limitations affecting woodland management. Competition from understory plants is a minor management concern. Carefully managed reforestation helps to control this competition. Site preparation practices, such as chopping, burning, and applying herbicides, help to control the initial plant competition and facilitate mechanical planting.

This map unit is well suited to most urban uses. It has slight limitations affecting most uses. Erosion is a hazard. Only the part of the site that is used for construction should be disturbed.

This soil has good potential for openland and woodland wildlife habitat and very poor potential for wetland wildlife habitat. Habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the establishment of desirable plants. Prescribed burning every three years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.

The capability subclass is IIIe. The woodland ordination symbol is 9A.

SnF—Smithdale-Luverne-Sacul complex, 15 to 35 percent slopes

This map unit consists of the very deep, well drained Smithdale and Luverne soils and the moderately well drained Sacul soil. It is on side slopes in highly dissected uplands. The soils occur as areas so intricately intermingled that they could not be mapped separately at the scale selected for mapping. The Smithdale soil makes up about 35 percent of the map unit, the Luverne soil makes up about 30 percent, and the Sacul soil makes up about 20 percent. Slopes generally are short and complex. Individual areas are irregular in shape. They range from 25 to more than 1,000 acres in size.

The Smithdale soil generally is on the upper parts of slopes and on narrow ridgetops. Typically, the surface layer is yellowish brown sandy loam about 7 inches

thick. The subsoil extends to a depth of 65 inches. It is yellowish red and red sandy clay loam in the upper part and red sandy loam in the lower part.

Important properties of the Smithdale soil—

Permeability: Moderate in the upper part of the subsoil; moderately rapid in the lower part
Available water capacity: High
Organic matter content: Low
Natural fertility: Low
Depth to bedrock: More than 60 inches
Root zone: More than 60 inches
Seasonal high water table: More than 6.0 feet deep
Shrink-swell potential: Low
Flooding: None

The Luverne soil generally is on the middle and lower parts of slopes. Typically, the surface layer is brown sandy loam about 5 inches thick. The subsoil extends to a depth of 41 inches. It is yellowish red clay in the upper part and dark red clay loam that has yellowish brown mottles in the lower part. The substratum, to a depth of 65 inches, is stratified red sandy loam, strong brown loamy sand, and light brownish gray sandy clay loam.

Important properties of the Luverne soil—

Permeability: Moderately slow
Available water capacity: Moderate
Organic matter content: Low
Natural fertility: Low
Depth to bedrock: More than 60 inches
Root zone: More than 60 inches
Seasonal high water table: More than 6.0 feet deep
Shrink-swell potential: Moderate
Flooding: None

The Sacul soil generally is on the lower parts of slopes and on benches. Typically, the surface layer is dark grayish brown sandy loam about 5 inches thick. The subsurface layer, to a depth of 12 inches, is brown sandy loam. The subsoil extends to a depth of 60 inches. In the upper part, it is red clay that has grayish brown mottles. In the next part, it is red clay loam that has light brownish gray mottles. In the lower part, it is gray clay loam.

Important properties of the Sacul soil—

Permeability: Slow
Available water capacity: High
Organic matter content: Low
Natural fertility: Low
Depth to bedrock: More than 60 inches
Root zone: More than 60 inches
Seasonal high water table: Perched, at a depth of 2.0 to 4.0 feet from January to April
Shrink-swell potential: High
Flooding: None

Included in mapping are a few small areas of Kinston, Mantachie, and Savannah soils. The poorly drained Kinston and somewhat poorly drained Mantachie soils are on narrow flood plains. Savannah soils are on narrow ridgetops. They have a fragipan. Also included are areas of soils that have a slope of less than 15 percent or more than 35 percent. Included soils make up about 15 percent of the map unit. Individual areas generally are less than 5 acres in size.

Most areas of this map unit are used for woodland and for wildlife habitat. A few areas are used for pasture and hay.

This map unit is not suited to cultivated crops, mainly because the slopes are too steep and the hazard of erosion is too severe. The irregular slope and the low fertility are also limitations.

This map unit is poorly suited to pasture and hay. The main management concerns are the slope, the low fertility, and a severe hazard of erosion. The more steeply sloping areas are best suited to native grasses. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture in good condition.

This map unit is suited to loblolly pine. Other species that commonly grow in areas of these soils include shortleaf pine, longleaf pine, sweetgum, and water oak. On the basis of a 50-year site curve, the site index for loblolly pine is 85 in areas of the Smithdale soil and 90 in areas of the Luverne and Sacul soils. The average annual growth of well stocked, even-aged, unmanaged stands of loblolly pine at 25 years of age is 2.1 cords per acre per year in areas of the Smithdale soil and 2.2 cords per acre per year in areas of the Luverne and Sacul soils. The understory vegetation consists mainly of greenbrier, poison oak, little bluestem, honeysuckle, waxmyrtle, muscadine grape, American beautyberry, red maple, yellow jessamine, huckleberry, and flowering dogwood.

This map unit has moderate limitations affecting timber management. The main management concerns are a hazard of erosion, an equipment limitation, and plant competition. Exposing the surface by removing ground cover increases the hazard of erosion, including rill and gully erosion. Roads, landings, and skid trails can be protected against erosion by constructing diversions, mulching, and seeding. The slope restricts the use of equipment. Using standard wheeled and tracked equipment when the soils are wet results in rutting and compaction. Cable yarding systems are safer and damage the soils less. Plant competition

reduces the growth of trees and can prevent adequate reforestation unless sites receive intensive preparation and maintenance. Site preparation can control the initial plant competition, and herbicides can be used to control the subsequent growth.

This map unit is poorly suited to most urban uses. It is generally not suitable as a site for buildings because of the slope. Other management concerns include the restricted permeability, the shrink-swell potential, and the low strength of the Luverne and Sacul soils.

This map unit has fair potential for openland wildlife habitat, good potential for woodland wildlife habitat, and very poor potential for wetland wildlife habitat. Habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every three years, rotated among several tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey. Habitat for wetland wildlife can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

The capability subclass is VIIe. The woodland ordination symbol is 9R.

SrA—Sucarnoochee silty clay, 0 to 1 percent slopes, frequently flooded

This very deep, somewhat poorly drained soil is on flood plains along streams in the Blackland Prairie. It is subject to flooding for brief periods several times each year. Individual areas generally are long and narrow. They range from 10 to 800 acres in size.

Typically, the surface layer is very dark grayish brown silty clay about 10 inches thick. The next layer, to a depth of 23 inches, is dark grayish brown clay that has olive brown mottles. The subsoil, to a depth of 65 inches, is dark gray clay that has brownish mottles.

Important properties of the Sucarnoochee soil—

Permeability: Very slow
Available water capacity: Moderate
Organic matter content: Medium
Natural fertility: High
Depth to bedrock: More than 60 inches
Root zone: More than 60 inches
Seasonal high water table: Perched, at a depth of 0.5 to 1.5 feet from January to April
Shrink-swell potential: High
Flooding: Frequent, for brief periods from January through April

Included in mapping are a few small areas of Faunsdale, Sumter, and Vaiden soils. These included soils are on the edges of mapped areas in slightly higher positions than the Sucarnoochee soil. They are not subject to flooding. Faunsdale and Sumter soils are calcareous throughout. Vaiden soils are acid in the upper part of the subsoil. Also included are small areas of poorly drained soils in slight depressions. Included soils make up about 10 percent of the map unit. Individual areas generally are less than 5 acres in size.

Most areas of this map unit are used as pasture or hay. A few areas are used for cultivated crops or woodland.

This map unit is poorly suited to cultivated crops. The flooding and wetness are the main management concerns. Tillage and planting may be delayed in spring, and crops may be damaged by flooding in late spring and early summer. Although the flooding could be controlled by a system of levees and pumps, installing such a system commonly is impractical. Shallow ditches can help to remove water from the surface.

This map unit is suited to pasture and hay. The main management concerns are the frequent flooding and the wetness. Grasses that are tolerant of wetness and flooding should be selected. Deferred grazing during wet periods helps to keep the soil and sod in good condition. A drainage system can help to remove excess water from the surface.

This map unit is well suited to cherrybark oak, sweetgum, water oak, and other hardwoods. It generally is not suited to pine trees because it is alkaline within a depth of 20 inches. Other species of hardwoods that commonly grow in areas of this soil include green ash, American sycamore, willow oak, and yellow-poplar. On the basis of a 50-year site curve, the site index is 90 for water oak. The average annual growth of well stocked, even-aged, unmanaged stands of water oak at 30 years of age is 1.0 cord per acre per year. The understory vegetation consists mainly of switchcane, honey locust, poison ivy, winged elm, sweetgum, sugarberry, green ash, blackberry, osageorange, and panicums.

This map unit has moderate and severe limitations affecting timber management. The main management concerns are the restricted use of equipment, the seedling mortality rate, and plant competition. The seasonal high water table, the flooding, and the low strength of the subsoil restrict the use of equipment to periods when the soil is dry. Using standard wheeled and tracked equipment when the soil is wet results in rutting and compaction. Using low-pressure ground equipment reduces damage to the soil and helps to maintain productivity. The high seedling mortality rate is caused by excessive wetness and the clayey texture of the surface layer. It can be reduced by

planting on beds, or it can be compensated for by increasing the number of trees planted. Plant competition reduces the growth of trees and can prevent adequate reforestation unless sites receive intensive preparation and maintenance. Site preparation can control the initial plant competition, and herbicides can be used to control the subsequent growth.

This map unit is poorly suited to most urban uses. The flooding, wetness, the very slow permeability, the high shrink-swell potential, and low strength on sites for local roads and streets are severe limitations. Pilings or well-compacted fill can elevate buildings above the expected level of flooding.

This map unit has good potential for woodland wildlife habitat and fair potential for openland and wetland wildlife habitat. Habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the establishment of desirable plants. Habitat for wetland wildlife can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

The capability subclass is IVw. The woodland ordination symbol is 6W.

SuC2—Sumter silty clay loam, 1 to 5 percent slopes, eroded

This moderately deep, well drained soil is on side slopes and narrow ridges in the Blackland Prairie. In most areas, the surface layer is a mixture of the original surface and material from the subsoil. In some places, all of the original surface layer has been removed. Some areas have a few rills and shallow gullies. Slopes generally are short and complex. Individual areas are irregular in shape. They range from 10 to 150 acres in size.

Typically, the surface layer is olive gray silty clay loam about 5 inches thick. The subsoil is clay and extends to a depth of 27 inches. It is pale olive in the upper part, light yellowish brown in the next part, and light olive brown in the lower part. The substratum, to a depth of 65 inches, is soft limestone (chalk).

Important properties of the Sumter soil—

Permeability: Very slow
Available water capacity: Moderate
Organic matter content: Medium
Natural fertility: High
Depth to bedrock: 20 to 40 inches
Root zone: 20 to 40 inches
Seasonal high water table: More than 6.0 feet deep
Shrink-swell potential: Moderate
Flooding: None

Included in mapping are a few small areas of Faunsdale, Okolona, and Sucarnoochee soils. Faunsdale and Okolona soils are on the lower parts of slopes. They are very deep over bedrock. The somewhat poorly drained Sucarnoochee soils are on narrow flood plains. Included soils make up about 10 percent of the map unit. Individual areas generally are less than 5 acres in size.

Most areas of this map unit are used for pasture and hay. A few areas are used for cultivated crops or woodland.

This map unit is suited to cultivated crops. The main management concerns are the slope, poor tilth, and a severe hazard of erosion. The surface layer is difficult to keep in good tilth where cultivation has mixed some of the subsoil into the plow layer. Contour farming, minimum tillage, and cover crops reduce the runoff rate and help to control erosion (fig. 6). Using a sod-based rotation system and incorporating crop residue into the soil increase the content of organic matter and improve tilth.

This map unit is well suited to pasture and hay. Erosion is a hazard if the surface is left bare during the establishment of pasture. The seedbed should be prepared on the contour or across the slope where practical. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture in good condition.

This map unit is suited to the production of eastern redcedar. It is generally not suited to the commercial production of pine trees because of alkaline materials within a depth of 20 inches. On the basis of a 50-year site curve, the site index for eastern redcedar is 40. The average annual growth of well stocked, even-aged, unmanaged stands of eastern redcedar at 40 years of age is 140 board feet per acre per year. The understory vegetation consists mainly of Johnsongrass, honeylocust, sugarberry, blackberry, panicums, MaCartney rose, winged elm, and osageorange.

This map unit has moderate and severe limitations affecting timber management. The main management concerns are the restricted use of equipment, the seedling mortality rate, and plant competition. The clayey texture of the surface layer restricts the use of equipment when the soil is wet. Harvesting activities should be planned for the drier parts of the year. Using low-pressure ground equipment reduces damage to the soil and helps to maintain productivity.

This map unit is poorly suited to most urban uses. It has severe limitations affecting building sites, local roads and streets, and most kinds of sanitary facilities. The main management concerns are the depth to

Figure 6.—Soybeans planted directly into the residue remaining from the previous crop in an area of Sumter silty clay loam, 1 to 5 percent slopes, eroded. Minimum tillage and management of crop residue help to increase the rate of water infiltration, reduce runoff, and control erosion.

bedrock, the very slow permeability, and the moderate shrink-swell potential. Properly designing foundations and footings and diverting runoff away from the buildings help to prevent the structural damage that results from shrinking and swelling. Septic tank absorption fields do not function properly during rainy periods because of the very slow permeability. An alternative system of sewage disposal is needed to dispose of sewage properly. Maintaining the existing plant cover during construction helps to control erosion.

This map unit has fair potential for openland and woodland wildlife habitat and very poor potential for wetland wildlife habitat. Habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the establishment of desirable plants.

The capability subclass is IIIe. The woodland ordination symbol is 3C.

SuE2—Sumter silty clay loam, 5 to 12 percent slopes, eroded

This moderately deep, well drained soil is on side slopes and narrow ridges in the uplands of the

Blackland Prairie. In most areas, the surface layer is a mixture of the original surface and material from the subsoil. In some places, all of the original surface layer has been removed. Some areas have a few rills and shallow gullies. Slopes generally are short and complex. Individual areas are irregular in shape. They range from 10 to 200 acres in size.

Typically, the surface layer is dark grayish brown silty clay loam about 3 inches thick. The subsoil extends to a depth of 23 inches. It is pale olive silty clay loam in the upper part, light yellowish brown silty clay in the next part, and light olive brown silty clay loam in the lower part. The substratum, to a depth of 65 inches, is soft limestone (chalk).

Important properties of the Sumter soil—

Permeability: Very slow
Available water capacity: Moderate
Organic matter content: Medium
Natural fertility: High
Depth to bedrock: 20 to 40 inches
Root zone: 20 to 40 inches
Seasonal high water table: More than 6.0 feet deep
Shrink-swell potential: Moderate
Flooding: None

Included in mapping are a few small areas of Faunsdale and Sucarnoochee soils. Faunsdale soils are on toeslopes. They are very deep over bedrock. The somewhat poorly drained Sucarnoochee soils are on narrow flood plains. Included soils make up about 10 percent of the map unit. Individual areas generally are less than 5 acres in size.

Most areas of this map unit are used for pasture or woodland.

This map unit is poorly suited to cultivated crops. The main management concerns are the slope, poor tilth, and a severe hazard of erosion. The surface layer is difficult to keep in good tilth where cultivation has mixed some of the subsoil into the plow layer. Contour farming, minimum tillage, and cover crops reduce the runoff rate and help to control erosion. Using a sod-based rotation system and incorporating crop residue into the soil increase the content of organic matter and improve tilth.

This map unit is suited to pasture and hay. The short, complex slopes and the severe hazard of erosion are the main management concerns. The seedbed should be prepared on the contour or across the slope where practical. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture in good condition.

This map unit is suited to the production of eastern redcedar. It is generally not suited to the commercial production of pine trees because of alkaline materials within a depth of 20 inches. On the basis of a 50-year site curve, the site index for eastern redcedar is 40. The average annual growth of well stocked, even-aged, unmanaged stands of eastern redcedar at 40 years of age is 140 board feet per acre per year. The understory vegetation consists mainly of Johnsongrass, honeylocust, sugarberry, blackberry, panicums, MaCartney rose, winged elm, and osageorange.

This map unit has moderate and severe limitations affecting timber management. The main management concerns are the hazard of erosion, the restricted use of equipment, the seedling mortality rate, and plant competition. Exposing the surface by removing ground cover increases the hazard of erosion, including rill and gully erosion. Roads, log landings, and skid trails can be protected against erosion by constructing diversions, mulching, and seeding. The clayey texture of the surface layer restricts the use of equipment when the soil is wet. Harvesting activities should be planned for the drier parts of the year. Using low-pressure ground equipment reduces damage to the soil and helps to maintain productivity.

This map unit is poorly suited to most urban uses. It has severe limitations affecting building sites, local roads and streets, and most kinds of sanitary facilities. The main management concerns are the slope, the depth to bedrock, the very slow permeability, and the moderate shrink-swell potential. Properly designing foundations and footings and diverting runoff away from the buildings help to prevent the structural damage that results from shrinking and swelling. Septic tank absorption fields do not function properly during rainy periods because of the very slow permeability. An alternative system of sewage disposal is needed to dispose of sewage properly. Maintaining the existing plant cover during construction helps to control erosion.

This map unit has fair potential for openland and woodland wildlife habitat and very poor potential for wetland wildlife habitat. Habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the establishment of desirable plants.

The capability subclass is VIe. The woodland ordination symbol is 3C.

UdC—Udorthents, dredged

This map unit consists of the very deep, well drained to excessively drained Udorthents on the flood plains along the Tombigbee River. Individual areas are rectangular. They range from 15 to 150 acres in size.

Udorthents consists of earthen material that has

been dredged from the Tombigbee River and pumped into holding basins formed by levees. The material is several feet thick and is typically stratified with textures ranging from clay to sand. Soil properties can vary widely within a short distance. Fragments of compacted earthy sediments, chalk, gravel, and woody debris commonly occur within the profile.

Important properties of the Udorthents—

Permeability: Variable
Available water capacity: Variable
Organic matter content: Low
Natural fertility: Low
Depth to bedrock: More than 60 inches
Root zone: Variable
Seasonal high water table: Variable
Shrink-swell potential: Variable
Flooding: None to occasional

Included in mapping are a few small areas of Bigbee, Mooreville, Riverview, Una, and Urbo soils. These included soils are on the fringes of mapped areas and have identifiable soil horizons. Included soils make up about 10 percent of the map unit. Individual areas generally are less than 2 acres in size.

Most areas of this unit are idle or are used for woodland and for wildlife habitat.

Areas of the Udorthents cannot be easily managed for crops, pasture, timber, or wildlife habitat because of the limited size of the areas and the variability in soil properties. Onsite investigation and testing are needed to determine the suitability of this unit for any uses.

The capability subclass is IVs. The woodland ordination symbol is 7S.

UrB—Urbo-Mooreville-Una complex, gently undulating, frequently flooded

This map unit consists of the very deep, somewhat poorly drained Urbo soil, the moderately well drained Mooreville soil, and the poorly drained Una soil on the flood plains along the Tombigbee River. The soils are subject to flooding for brief periods in most years, generally in late winter or in spring. The soils occur as areas so intricately intermingled that they could not be mapped separately at the scale selected for mapping. The Urbo soil makes up about 40 percent of the map unit, the Mooreville soil makes up about 30 percent, and the Una soil makes up about 20 percent. Slopes are short and smooth and range from 0 to 3 percent. Individual areas are usually broad. They range from 50 to more than 1,500 acres in size.

The somewhat poorly drained Urbo soil is in flat to slightly concave positions, generally on low to intermediate positions on low ridges. Typically, the surface layer is dark grayish brown silty clay loam about 4 inches thick. The subsoil extends to a depth of 65 inches. It is dark brown silty clay and grayish brown clay in the upper part, grayish brown silty clay that has brownish mottles in the next part, and grayish brown clay that has brownish mottles in the lower part.

Important properties of the Urbo soil—

Permeability: Very slow
Available water capacity: High
Organic matter content: Medium
Natural fertility: Medium
Depth to bedrock: More than 60 inches
Root zone: More than 60 inches
Seasonal high water table: Perched, at a depth of 1.0 to 2.0 feet from January to April
Shrink-swell potential: High
Flooding: Frequent, for brief periods from January through April

The moderately well drained Mooreville soil is in high, convex positions on low ridges. Typically, the surface layer is dark brown loam about 6 inches thick. The subsoil extends to a depth of 51 inches. In the upper part, it is yellowish brown sandy clay loam that has grayish and reddish mottles. In the lower part, it is clay loam that is mottled in shades of yellow, brown, red, and gray. The substratum, to a depth of 65 inches, is light brownish gray sandy loam.

Important properties of the Mooreville soil—

Permeability: Moderate
Available water capacity: High
Organic matter content: Medium
Natural fertility: Medium
Depth to bedrock: More than 60 inches
Root zone: More than 60 inches
Seasonal high water table: Apparent, at a depth of 1.5 to 3.0 feet from January to April
Shrink-swell potential: Moderate
Flooding: Frequent, for brief periods from January through April

The poorly drained Una soil is in swales, sloughs, and other depressional areas at the lowest elevations on the flood plain. Typically, the surface layer is very dark grayish brown silty clay loam about 4 inches thick. The subsoil is clay and extends to a depth of 65 inches. In the upper part, it is grayish brown and has brownish mottles. In the next part, it is light brownish gray and has brownish mottles. In the lower part, it is gray and has reddish and brownish mottles.

Important properties of the Una soil—

Permeability: Very slow
Available water capacity: High
Organic matter content: Medium
Natural fertility: Medium
Depth to bedrock: More than 60 inches
Root zone: More than 60 inches
Seasonal high water table: Perched, from 2.0 feet above the surface to a depth of 0.5 foot from January to June
Shrink-swell potential: High
Flooding: Frequent, for brief periods from January through April

Included in mapping are a few small areas of Annemaine, Cahaba, Columbus, and Riverview soils. Annemaine, Cahaba, and Columbus soils are on low knolls or remnants of terraces. Annemaine and Cahaba soils have reddish colors in the subsoil. Columbus soils have a brownish subsoil that is more strongly developed than that of the Mooreville soil. Riverview soils are in positions similar to those of the Mooreville soils. They do not have low-chroma mottles in the upper part of the subsoil. Included soils make up about 10 percent of the map unit. Individual areas generally are less than 5 acres in size.

Most areas of this map unit are wooded and are used for wildlife habitat. A few areas are used for pasture, hay, or cultivated crops.

This map unit is not suited to most cultivated crops. The frequent flooding and the wetness are the main management concerns. If cultivated crops are grown, a surface drainage system and protection from flooding are needed.

This map unit is poorly suited to pasture and hay because of the frequent flooding and the wetness. If areas are used for pasture or hay, grasses that tolerate the wet soil conditions should be selected. Common bermudagrass is suitable. Shallow ditches can help to remove excess water from the surface.

This map unit is suited to loblolly pine and hardwoods. Species of hardwood that commonly grow in areas of this map unit include American sycamore, yellow-poplar, Nuttall oak, overcup oak, cherrybark oak, water oak, green ash, and sweetgum. On the basis of a 50-year site curve, the site index for loblolly pine is 95 in areas of the Urbo soil and 100 in areas of the Mooreville soil. The average annual growth of well stocked, even-aged, unmanaged stands of loblolly pine at 25 years of age is 2.5 cords per acre per year in areas of the Urbo soil and 2.7 cords per acre per year in areas of the Mooreville soil. On the basis of a 50-year site curve, the site index for water tupelo is 65 in areas of the Una soil. The average annual growth of well stocked, even-aged, unmanaged stands of water tupelo at 30 years of age is 0.5 cord per acre per year. The understory vegetation consists mainly of muscadine grape, Alabama supplejack, greenbrier, poison ivy, longleaf uniola, switchcane, sweetgum, blackgum, water oak, sweetbay, green ash, and red maple.

This map unit has severe limitations affecting timber management (fig. 7). The main management concerns are the restricted use of equipment, the seedling mortality rate, and plant competition. The seasonal high water table and the flooding restrict the use of equipment to periods when the soils are dry. Using standard wheeled and tracked equipment when the soils are wet results in rutting and compaction. Using low-pressure ground equipment reduces damage to the soils and helps to maintain productivity. The high seedling mortality rate is caused by excessive wetness. It can be reduced by planting on raised beds, or it can be compensated for by increasing the number of trees planted. Plant competition reduces the growth of trees and can prevent adequate reforestation unless sites receive intensive preparation and maintenance. Site preparation can control the initial plant competition, and herbicides can be used to control the subsequent growth.

This map unit is not suited to most urban uses. The flooding and wetness are severe limitations affecting most uses. Although it is generally not feasible to control the flooding, pilings or well-compacted fill can elevate buildings above the expected level of flooding.

The Urbo and Mooreville soils have fair potential for openland wildlife habitat and good potential for woodland wildlife habitat. The Una soil has poor potential for openland and woodland wildlife habitat. The potential for wetland wildlife habitat is fair in areas of the Urbo and Una soils and poor in areas of the Mooreville soil. Habitat for openland and woodland wildlife can be improved by planting or encouraging the growth of oak trees and suitable understory plants. Habitat for wetland wildlife can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

The capability subclass is Vw. The woodland ordination symbol is 10W in areas of the Urbo soil, 12W in areas of the Mooreville soil, and 7W in areas of the Una soil.

VdA—Vaiden silty clay, 0 to 1 percent slopes

This very deep, somewhat poorly drained soil is on flats or in slightly convex positions on uplands in the Blackland Prairie. Slopes are long and smooth.

Figure 7.—Una silty clay loam, ponded, in an area of Urbo-Mooreville-Una complex, gently undulating, frequently flooded. This soil is suited to trees that are tolerant of wet soil conditions. The swollen or enlarged lower part of the trunk of these baldcypress and tupelo gum trees is an adaptation that helps the trees tolerate the excessive wetness of the soil.

Individual areas generally are broad and oblong. They range from 20 to 1,200 acres in size.

Typically, the surface layer is dark grayish brown silty clay about 7 inches thick. The subsoil extends to a depth of 65 inches. It is yellowish brown clay that has brownish, grayish, and reddish mottles in the upper part and grayish mottles and ped coatings in the lower part.

Important properties of the Vaiden soil—

Permeability: Very slow
Available water capacity: Moderate
Organic matter content: Low
Natural fertility: Medium
Depth to bedrock: More than 60 inches
Root zone: More than 60 inches
Seasonal high water table: Perched, at a depth of 1.0 to 2.0 feet from January to April
Shrink-swell potential: Very high
Flooding: None

Included in mapping are a few small areas of Faunsdale and Sucarnoochee soils. Faunsdale soils are on the lower parts of slopes. They are alkaline throughout. Sucarnoochee soils are on narrow flood plains and are subject to frequent flooding. Included soils make up about 5 percent of the map unit. Individual areas generally are less than 5 acres in size.

Most areas of this map unit are used for cultivated

crops, pasture, or hay. A few areas are used for woodland or for homesites.

This map unit is suited to most cultivated crops. The main management concerns are wetness and poor tilth. The wetness delays planting and tillage operations in most years. Shallow ditches can help to remove excess surface water. This soil can be worked only within a narrow range of moisture content. It becomes cloddy if tilled when too wet or too dry. Returning all crop residue to the soil improves tilth, reduces crusting, increases the available water capacity, and increases the rate of water infiltration.

This map unit is well suited to pasture and hay. Tall fescue, dallisgrass, Johnsongrass, and bahiagrass are the most commonly grown grasses. Wetness is the main management concern. Shallow ditches can help to remove excess surface water. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture in good condition. Applications of lime and fertilizer improve the fertility of the soil and increase the production of forage.

This map unit is suited to loblolly pine. Other species that commonly grow in areas of this soil include shortleaf pine, sweetgum, and water oak. On the basis of a 50-year site curve, the site index for loblolly pine is 80. The average annual growth of well stocked, even-aged, unmanaged stands of loblolly pine at 25 years of age is 1.8 cords per acre per year. The understory vegetation consists mainly of panicums, blackberry, greenbrier, poison ivy, and hawthorns.

This map unit has moderate and severe limitations affecting timber management. The main management concerns are the restricted use of equipment, the seedling mortality rate, and plant competition. The clayey texture of the surface layer and the subsoil restricts the use of equipment, especially during rainy periods. Using standard wheeled and tracked equipment when the soil is wet results in rutting and compaction. Using low-pressure ground equipment reduces damage to the soil and helps to maintain productivity. Harvesting and management activities should be planned for seasons when the soil is dry. The high seedling mortality rate is caused by wetness and the clayey textures. It can be compensated for by planting seedlings on raised beds and increasing the number of seedlings planted. Plant competition reduces the growth of trees and can prevent adequate reforestation unless sites receive intensive preparation and maintenance. Site preparation can control the initial plant competition, and herbicides can be used to control the subsequent growth.

This map unit is poorly suited to most urban uses. It has severe limitations affecting building sites, local roads and streets, and most kinds of sanitary facilities. The main management concerns are the very high shrink-swell potential, the very slow permeability, wetness, and low strength on sites for roads and streets. If excavations are made, the cutbanks cave easily. Support beams should be used to maintain the stability of the cutbanks. Properly designing foundations and footings and diverting runoff away from the buildings help to prevent the structural damage that results from shrinking and swelling. Special design is needed for roads and streets to compensate for the instability of the subsoil. Septic tank absorption fields do not function properly because of the very slow permeability and the seasonal high water table. An alternate method is needed to dispose of sewage properly.

This map unit has fair potential for openland wildlife habitat, good potential for woodland wildlife habitat, and poor potential for wetland wildlife habitat. Habitat for deer, turkey, and squirrel can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every three years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey. Habitat for wetland wildlife can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

The capability subclass is IIIw. The woodland ordination symbol is 8C.

VdB—Vaiden silty clay, 1 to 3 percent slopes

This very deep, somewhat poorly drained soil is on side slopes in the uplands of the Blackland Prairie. Slopes generally are long and smooth. Individual areas generally are oblong. They range from 10 to 800 acres in size.

Typically, the surface layer is dark grayish brown silty clay about 5 inches thick. The subsoil is clay and extends to a depth of 65 inches. It is yellowish brown and has reddish and grayish mottles in the upper part and is mottled grayish, brownish, and reddish in the lower part.

Important properties of the Vaiden soil—

Permeability: Very slow
Available water capacity: Moderate
Organic matter content: Low
Natural fertility: Medium
Depth to bedrock: More than 60 inches
Root zone: More than 60 inches

Seasonal high water table: Perched, at a depth of 1.0 to 2.0 feet from January to April
Shrink-swell potential: Very high
Flooding: None

Included in mapping are a few small areas of Faunsdale and Sucarnoochee soils. Faunsdale soils are on the lower parts of slopes. They are alkaline throughout. Sucarnoochee soils are on narrow flood plains. They are alkaline in the upper part of the subsoil and are subject to frequent flooding. Included soils make up about 5 percent of the map unit. Individual areas generally are less than 5 acres in size.

Most areas of this map unit are used for cultivated crops, pasture, or hay. A few areas are used for woodland or for homesites.

This map unit is suited to most cultivated crops. The main management concerns are poor tilth, wetness, and the hazard of erosion. Erosion is a moderate hazard if this soil is cultivated. This soil can be worked only within a narrow range of moisture content. It becomes cloddy if tilled when too wet or too dry. Conservation tillage, strip crops, contour farming, and cover crops help to reduce the runoff rate and control erosion. Returning all crop residue to the soil improves tilth, reduces crusting, and increases the available water capacity.

This map unit is well suited to pasture and hay. Tall fescue, dallisgrass, Johnsongrass, and bahiagrass are the most commonly grown grasses. The seedbed should be prepared on the contour or across the slope. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture in good condition. Applications of lime and fertilizer improve the fertility of the soil and increase the production of forage.

This map unit is suited to loblolly pine. Other species that commonly grow in areas of this soil include longleaf pine, shortleaf pine, sweetgum, and water oak. On the basis of a 50-year site curve, the site index for loblolly pine is 80. The average annual growth of well stocked, even-aged, unmanaged stands of loblolly pine at 25 years of age is 1.8 cords per acre per year. The understory vegetation consists mainly of panicums, blackberry, greenbrier, poison ivy, and hawthorns.

This map unit has moderate and severe limitations affecting timber management. The main management concerns are the restricted use of equipment, the seedling mortality rate, and plant competition. The clayey texture of the surface layer and the subsoil restricts the use of equipment, especially during rainy periods. Using standard wheeled and tracked equipment when the soil is wet results in rutting and compaction. Using low-pressure ground equipment reduces damage to the soil and helps to maintain productivity. Harvesting and management activities should be planned for seasons when the soil is dry. Planting rates can be increased to compensate for the high rate of seedling mortality. Plant competition reduces the growth of trees and can prevent adequate reforestation unless sites receive intensive preparation and maintenance. Site preparation can control the initial plant competition, and herbicides can be used to control the subsequent growth.

This map unit is poorly suited to most urban uses. It has severe limitations affecting building sites, local roads and streets, and most kinds of sanitary facilities. The main management concerns are the very high shrink-swell potential, the very slow permeability, wetness, and low strength on sites for roads and streets. If excavations are made, the cutbanks cave easily. Support beams should be used to maintain the stability of the cutbanks. Properly designing foundations and footings and diverting runoff away from the buildings help to prevent the structural damage that results from shrinking and swelling. Special design is needed for roads and streets to compensate for the instability of the subsoil. Septic tank absorption fields do not function properly because of the very slow permeability and the seasonal high water table. An alternate method is needed to dispose of sewage properly.

This map unit has fair potential for openland wildlife habitat, good potential for woodland wildlife habitat, and poor potential for wetland wildlife habitat. Habitat for deer, turkey, and squirrel can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every three years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey. Habitat for wetland wildlife can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

The capability subclass is IIIe. The woodland ordination symbol is 8C.

Prime Farmland

Prime farmland is one of several kinds of important farmland defined by the U.S. Department of Agriculture. It is of major importance in meeting the Nation's short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation's prime farmland.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forest land, or other land, but it is not urban or built-up land or water areas. The soil qualities, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. It is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. The slope ranges mainly from 0 to 5 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

About 114,000 acres in the survey area, or nearly 20 percent of the total acreage, meets the soil requirements for prime farmland. Scattered areas of this land are throughout the county, but most are in the southwestern part in general soil map units 1, 3, 4, 7, and 9, which are described under the heading "General Soil Map Units." About 25,000 acres of prime farmland in the county is used for cultivated crops.

The map units in the survey area that are considered prime farmland are listed at the end of this section. This list does not constitute a recommendation for a particular land use. The extent of each listed map unit is shown in table 5. The location is shown on the detailed soil maps at the back of this publication. The soil qualities that affect use and management are described under the heading "Detailed Soil Map Units."

The map units that meet the requirements for prime farmland are:

AnA	Annemaine loam, 0 to 2 percent slopes, occasionally flooded
BaA	Bama loam, 0 to 2 percent slopes
BaB	Bama sandy loam, 2 to 5 percent slopes
CbA	Cahaba sandy loam, 0 to 2 percent slopes, occasionally flooded
CoA	Columbus loam, 0 to 2 percent slopes, occasionally flooded
FaA	Faunsdale silty clay, 0 to 1 percent slopes
FaB	Faunsdale silty clay, 1 to 3 percent slopes
LdA	Lucedale loam, 0 to 2 percent slopes
OkA	Okolona silty clay, 0 to 1 percent slopes
OkB	Okolona silty clay, 1 to 3 percent slopes
ShA	Savannah loam, 0 to 2 percent slopes
ShB	Savannah loam, 2 to 5 percent slopes
VdA	Vaiden silty clay, 0 to 1 percent slopes
VdB	Vaiden silty clay, 1 to 3 percent slopes

Use and Management of the Soils

This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help to prevent soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavioral characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis in predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops and pasture; as woodland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreational facilities; and for wildlife habitat. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment in all or part of the survey area. The survey can help planners to maintain or create a land use pattern in harmony with the natural soil.

Contractors can use this survey to locate sources of sand and gravel, roadfill, and topsoil. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, playgrounds, lawns, and trees and shrubs.

Crops and Pasture

Kenneth M. Rogers, conservation agronomist, Natural Resources Conservation Service, helped prepare this section.

General management needed for crops and pasture is suggested in this section. The estimated yields of the main crops and pasture plants are listed for each soil, the system of land capability classification used by the Natural Resources Conservation Service is explained, and the crops or pasture plants best suited to the soils, including some not commonly grown in the survey area, are identified.

Planners of management systems for individual fields or farms should consider the detailed information given in the description of each soil under the heading "Detailed Soil Map Units." Specific information can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension System.

In 1992, approximately 25,280 acres of cultivated crops and 19,750 acres of pasture were in Pickens County *(1)*. The total acreage used for cultivated crops and pasture has been decreasing slightly for several years. The trend is toward the conversion of marginal cropland to woodland.

The potential in Pickens County for increased production of food and fiber is good. About 90,000 acres that is currently used for pasture and woodland is potentially good cropland. Yields can be increased in cultivated areas if the most current technology is applied. This soil survey can help land users make sound land management decisions and facilitate the application of crop production technology.

The field crops that are suited to the soils and climate in Pickens County include many crops that are not commonly grown because of economic considerations. Corn, cotton, and soybeans are the main row crops. Vegetable crops, fruit, and similar crops can be grown if economic conditions are favorable. Wheat and oats are the only close-growing crops planted for grain production, although barley, rye, and triticale can be grown. The specialty crops grown in the county include sweet corn, sweet potatoes, peas, okra, melons, and turnips. Many of the soils in the survey area, including Bama, Bigbee, Cahaba, Lucedale, Savannah, and Smithdale soils, are well suited to specialty crops. If economic conditions are favorable, a large acreage of these crops can be grown. Information regarding specialty crops can be obtained from the local offices of the

Cooperative Extension System or the Natural Resources Conservation Service.

Erosion is a major management concern on about one-half of the cropland and one-half of the pastureland in Pickens County *(14)*. In areas where the slope is more than two percent, erosion is a potential hazard. Bama, Faunsdale, Luverne, Okolona, Smithdale, Sumter, and Vaiden soils are examples of sloping soils that are cultivated and are subject to erosion.

Erosion can reduce productivity and can result in the pollution of streams. Productivity is reduced as the surface layer erodes and more of the subsoil is incorporated into the plow layer. Loss of the surface layer is especially damaging on soils that have a clayey subsoil, such as Luverne, Okolona, Sacul, Sumter, and Vaiden soils, and on soils that have a dense layer within the root zone, such as Savannah soils. Controlling erosion on farmland minimizes the pollution of streams and improves the quality of water for municipal uses, for recreational uses, and for fish and wildlife.

Erosion control practices provide a protective plant cover, increase the rate of water infiltration, and help to control runoff. A cropping system that keeps plant cover and crop residue on the surface for extended periods can hold soil losses to amounts that do not reduce the productive capacity of the soils. Including grasses and legumes in the cropping system helps to control erosion in sloping areas and improves tilth for the crops that follow in the rotation. The legumes also increase the nitrogen levels in the soils.

Applying a system of conservation tillage and leaving crop residue on the surface increase the rate of water infiltration and help to control runoff and erosion. Using a no-till method of planting reduces the hazard of erosion. This practice is suitable on most of the soils in the county.

Terraces and diversions help to control runoff and erosion. They are most practical on very deep, well drained soils that have uniform slopes. Examples are Bama, Luverne, and Smithdale soils. Soils of the Blackland Prairie, such as Faunsdale, Okolona, Sumter, and Vaiden soils, are generally poorly suited to terraces because of the very slow rate of water infiltration. Buffer strips are effective for minimizing erosion in areas of these soils. Grassed waterways or underground outlets are essential in areas where terraces and diversions are installed. Diversions can be used to intercept surface runoff from hilly uplands and to divert the water around the fields to vegetated disposal areas.

Contour farming is an effective method of erosion control in cultivated areas when used in conjunction with a water-disposal system. It is best suited to soils that have smooth, uniform slopes. Examples are Bama, Faunsdale, Luverne, Okolona, Savannah, Smithdale, and Vaiden soils.

Soil blowing can be a management concern in early spring on some soils in the uplands, especially if the soils are dry and are not protected by a plant cover. The hazard of erosion generally is highest after the seedbed has been prepared, after planting, and when the plants are small. Tillage methods that leave crop residue on the surface reduce the hazard of soil blowing. Conventional planting practices should include an implement that scratches the surface, leaving a rough, irregular pattern. Also, strips of close-growing crops are effective as windbreaks. If possible, seedbed preparation should be delayed until after March, which generally is windy. Additional information regarding the design of erosion-control practices is available at the local office of the Natural Resources Conservation Service.

Pickens County has an adequate amount of rainfall for the commonly grown crops. Prolonged periods of drought are rare, but the distribution of rainfall during spring and summer generally results in droughty periods during the growing season in most years. Irrigation may be needed during these periods to reduce plant stress. Most of the soils that are commonly used for cultivated crops are suitable for irrigation; however, the amount of water applied should be regulated to prevent excessive runoff. Some soils have a slow or very slow rate of water infiltration that limits their suitability for irrigation. Examples are Faunsdale, Okolona, Sucarnoochee, Sumter, and Vaiden soils.

In Pickens County, most of the soils that are used for crops and that are on terraces and uplands in the Coastal Plain have a surface layer of sandy loam or loam that is light in color and has a low content of organic matter. Regular additions of crop residue, manure, and other organic material can improve the soil structure and reduce crusting, thus improving the rate of water infiltration. Most of the soils that are used for crops in the Blackland Prairie area have a dark, clayey surface layer that has a medium content of organic matter. Regular additions of crop residue, manure, and other organic material can also improve the structure of these soils.

The use of heavy equipment during tillage results in compaction in most soils. The compacted layers, called plow pans or traffic pans, are generally at a depth of 4 to 10 inches. They restrict the rate of water infiltration and limit the growth of plant roots. Soils that readily develop traffic pans include the Bama, Cahaba, Columbus, Lucedale, Savannah, and Smithdale soils.

Tilth is an important factor affecting plant growth. It

influences the rate of water infiltration into the soil. Soils considered to have good tilth have granular structure and many pores in the surface layer. The factors that most modify tilth are tillage and erosion. Soils of the Blackland Prairie generally have poor tilth because of the high content of clay in the surface layer. They become cloddy if plowed when too wet or too dry. Examples are Faunsdale, Okolona, Sucarnoochee, and Vaiden soils.

In Pickens County, natural fertility is low in most of the soils on terraces and in uplands of the Coastal Plain and is high or medium in most of the soils of the Blackland Prairie. Applications of agricultural limestone are needed to neutralize acidity in most of the soils of the Coastal Plain and on terraces and in some of the soils of the Blackland Prairie. The crops commonly grown in the county respond well to applications of lime and fertilizer. The levels of available phosphorus and potash are generally low in most of the soils; however, some fields may have a buildup of phosphorus or potassium because of past applications of commercial fertilizer. Therefore, all applications of lime and fertilizer should be based on the results of a soil test. Leaching is a concern in areas of sandy soils, such as Bigbee soils. Higher levels of nitrogen, applied in split applications, should be used on these soils. The Cooperative Extension System can help in the determination of the kinds and amounts of fertilizer and lime to apply.

Wetness is a management concern in areas of Kinston, Mantachie, Myatt, Sucarnoochee, Una, and Urbo soils. A drainage system can minimize the harmful effects of excessive wetness. Flooding during the growing season is also a concern in areas of these soils. In some years, it delays planting dates and damages crops.

Tall fescue, bahiagrass, dallisgrass, Johnsongrass, and hybrid bermudagrass are the main perennial grasses grown for pasture and hay in Pickens County. Rye, ryegrass, oats, and wheat are grown as annual cool-season grass forage. Millets, sorghums, and hybrid forage sorghums provide most of the annual warm-season grass forage. These annuals are generally grown for temporary grazing or hay in areas otherwise commonly used for cropland. Arrowleaf clover, ball clover, crimson clover, and other cool-season forage legumes are suitable for most of the soils in the county, especially if agricultural limestone is applied in proper amounts. Alfalfa, a warm-season legume, is suitable for well drained soils, such as Bama, Cahaba, Lucedale, and Smithdale soils of the Coastal Plain and Okolona and Sumter soils of the Blackland Prairie.

Several management practices are needed in areas that are used for pasture and hay production. These practices include proper stocking rates, weed control, proper applications of fertilizer, rotation grazing, and scattering of animal droppings. Overgrazing, insufficient fertilizer, and acid soils can result in weak plants and poor stands that are quickly infested with weeds. Maintaining a dense cover of desired pasture species can prevent weeds from becoming established.

Yields per Acre

The average yields per acre that can be expected of the principal crops under a high level of management are shown in tables 6 and 7. In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors. The land capability classification of each map unit also is shown in table 6.

The yields are based mainly on the experience and records of farmers, conservationists, and extension agents. Available yield data from nearby counties and results of field trials and demonstrations are also considered.

The management needed to obtain the indicated yields of the various crops depends on the kind of soil and the crop. Management can include drainage, erosion control, and protection from flooding; the proper planting and seeding rates; suitable high-yielding crop varieties; appropriate and timely tillage; control of weeds, plant diseases, and harmful insects; favorable soil reaction and optimum levels of nitrogen, phosphorus, potassium, and trace elements for each crop; effective use of crop residue, barnyard manure, and green manure crops; and harvesting that ensures the smallest possible loss.

The estimated yields reflect the productive capacity of each soil for each of the principal crops. Yields are likely to increase as new production technology is developed. The productivity of a given soil compared with that of other soils, however, is not likely to change.

Crops other than those shown in the tables are grown in the survey area, but estimated yields are not listed because the acreage of such crops is small. The local office of the Natural Resources Conservation Service or of the Cooperative Extension System can provide information about the management and productivity of the soils for those crops.

Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their

limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for rangeland, for woodland, and for engineering purposes.

In the capability system, soils are generally grouped at three levels—capability class, subclass, and unit. Only class and subclass are used in this survey.

Capability classes, the broadest groups, are designated by numerals I through VIII. The numerals indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class I soils have few limitations that restrict their use.

Class II soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.

Class III soils have severe limitations that reduce the choice of plants or that require special conservation practices, or both.

Class IV soils have very severe limitations that reduce the choice of plants or that require very careful management, or both.

Class V soils are not likely to erode but have other limitations, impractical to remove, that limit their use.

Class VI soils have severe limitations that make them generally unsuitable for cultivation.

Class VII soils have very severe limitations that make them unsuitable for cultivation.

Class VIII soils and miscellaneous areas have limitations that nearly preclude their use for commercial crop production.

Capability subclasses are soil groups within one class. They are designated by adding a small letter, *e, w, s,* or *c,* to the class numeral, for example, IIe. The letter *e* shows that the main hazard is the risk of erosion unless close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); *s* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c,* used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry.

In class I there are no subclasses because the soils of this class have few limitations. Class V contains only the subclasses indicated by *w* because the soils in class V are subject to little or no erosion. They have other limitations that restrict their use to pasture, woodland, wildlife habitat, or recreation.

Capability units are soil groups within a subclass. The soils in a capability unit are enough alike to be suited to the same crops and pasture plants, to require similar management, and to have similar productivity. Capability units are generally designated by adding an Arabic numeral to the subclass symbol, for example, IIe-4 and IIIe-6.

The capability classification of each map unit is given in the section “Detailed Soil Map Units” and in the yields table.

Landscaping and Gardening

Kenneth M. Rogers, conservation agronomist, Natural Resources Conservation Service, helped to prepare this section.

The soils in residential areas are used primarily as sites for homes, driveways, and streets. Remaining areas of each lot are commonly used for lawns, which enhance the appearance of the home; as gardens for vegetables or flowers and shrubs; as orchards for fruits and nuts; for recreational uses; as habitat for animals and birds; for trees, which provide shade and promote energy conservation; for vegetation and structures designed to abate noise, enhance privacy, and provide protection from the wind; and for septic tank absorption fields. Because the outdoor areas are used for several purposes, careful planning and a good understanding of the soils are important.

This section contains general soil-related information for landscaping and gardening. Other information may be obtained from the local office of the Cooperative Extension System, the Natural Resources Conservation Service, or private businesses that provide landscaping and related services. The amount of soil information needed for use in some areas is beyond the scope of this survey and is more detailed than that provided at the map scale used. Onsite investigation is needed.

Most of the soils in the residential areas in Pickens County have been disturbed to some degree during construction of houses, streets, driveways, and utility service. This construction involved cutting and filling, grading, and excavating. As a result, soil properties are more variable and less predictable than in undisturbed areas. Onsite examination is necessary in planning land uses for soils in disturbed areas.

Soils that have had the surface layer removed during grading and that are clayey or have dense layers in the subsoil are some of the poorest soils for plant growth. Luverne, Okolona, Sacul, Sumter, and

Vaiden soils are clayey. Savannah soils have dense layers in the subsoil. The exposed dense, firm subsoil restricts root penetration, absorbs little rainfall, and results in excessive runoff. Incorporating organic matter into the soil improves tilth and the rate of water infiltration and provides a more desirable rooting medium. Areas that are subject to intensive foot traffic should be covered with gravel or a mulch, such as pine bark or wood chips.

Some soils are wet and subject to flooding. Examples are Kinston, Mantachie, Myatt, Sucarnoochee, Una, and Urbo soils. The wetness limits the selection of plants to those that are tolerant of a high moisture content in the soil. Several methods can be used to minimize the effects of the wetness. Shallow ditches can help to remove excess surface water. Installing underground tile drains can lower the water table in permeable soils. Bedding the surface layer of slowly permeable soils, such as Una and Urbo soils, helps to provide a satisfactory root zone for some plants.

Some soils are on flood plains. Examples are Iuka, Mooreville, Ochlockonee, and Riverview soils. Most plants used for gardening and landscaping can be grown on these soils, but consideration should be given to the effects of floodwater. Surface drainage is a management concern because urban uses commonly result in increased rates of surface runoff, which increase the frequency and severity of flooding. Advice and assistance regarding drainage problems can be obtained from the Natural Resources Conservation Service, municipal and county engineering departments, and private engineering companies.

Such sandy soils as Bigbee soils are droughty, have low fertility, and have a low content of organic matter. Droughtiness limits the selection of plants that can be grown unless irrigation is provided. Additions of organic matter increase the available water capacity and help to retain nutrients in the root zone. Supplemental watering and split applications of plant nutrients are recommended. Using a mulch, such as pine bark, wood chips, or pine straw, or incorporating peat moss or well-decomposed manure into the soil provides a more desirable medium for plant growth.

Natural fertility is low in most of the soils in Pickens County. Most of the soils, with the exception of some in the Blackland Prairie area, are strongly acid or very strongly acid. Additions of ground limestone are needed to neutralize the acidity of most of the soils. The original surface layer contains the most plant nutrients and the most favorable pH for most plants. In many areas, the fertility of the surface layer has been improved by applications of lime and fertilizer. If the surface layer is removed during construction, the remaining soil is very acid and low in available plant nutrients. Also, some nutrients are unavailable for plant growth in acid soil conditions. Disturbed soils generally need larger amounts of lime and fertilizer, which should be applied according to the results of soil tests and the type of plants grown. Information on sampling for soil testing can be obtained from the Cooperative Extension System, the Natural Resources Conservation Service, and local nurseries.

In the following paragraphs, some of the plants that are used in landscaping and gardening and some management relationships between the plants and the soils are described. Information in this section should be supplemented by consultations with specialists at the Cooperative Extension System, the Natural Resources Conservation Service, and private landscaping and gardening businesses.

The grasses used for landscaping in Pickens County are mainly vegetatively propagated species, such as zoysiagrass, hybrid bermudagrass, St. Augustine grass, and centipede grass, and seeded species, such as common bermudagrass and centipede grass. The grasses commonly used for short-term cover include ryegrass, rye, wheat, Sudangrass, oats, and millet.

The vegetatively propagated plants are usually planted as sprigs, plugs, or sod. Additions of topsoil may be needed before planting in some areas. Also, lime and fertilizer should be applied and incorporated into the soil. The plants should be placed in close contact with the soil, and the plantings should be watered to ensure the establishment of the root system. St. Augustine grass, centipede grass, and certain strains of zoysiagrass are moderately shade tolerant. St. Augustine grass and zoysiagrass normally require more maintenance than centipede grass. The strains of hybrid bermudagrass are fast growing, but they are not as tolerant of shade as St. Augustine grass, centipede grass, or zoysiagrass.

Common perennial grasses that are established by seeding include common bermudagrass and centipede grass. Lime and fertilizer should be applied and incorporated into the soil before seeding. Proper planting depth is important when grasses are established from seed.

Short-term vegetative cover is used to protect the soil at construction sites or to provide cover between the planting seasons of the desired grass species. The most commonly used grasses for short-term cover are ryegrass for cool seasons and sudangrass or millet for warm seasons. These species are annuals and die after the growing season. Periodic applications of lime and fertilizer are needed on all types of grasses. The

kinds and amounts of lime and fertilizer to apply should be based on the results of soil tests.

Vines can be used to provide vegetative cover in moderately shaded areas and in steep areas that cannot be mowed. English ivy and periwinkle can be used for ground cover or on walls and fences. All of these plants are propagated vegetatively, usually from potted plants or sprigs.

Mulches can be used for ground cover in areas where traffic is too heavy for grass cover, in areas where shrubs and flowers are desired with additional ground cover, and in densely shaded areas. Mulches provide effective ground cover. They also provide immediate cover for erosion control in areas where live vegetation is not desired. Effective mulches include pine straw, small-grain straw, hay, composted grass clippings, wood chips, pine bark, gravel, and several manufactured materials. The type of mulch to use depends to some extent on the hazard of erosion. Mulches also can be used to conserve soil moisture and control weeds around trees, shrubs, and flowers.

Shrubs are used primarily to enhance the appearance of homesites. They also can be used to control traffic. They can be effective in dissipating the energy from raindrops and from runoff from roofs. Most native and adapted species add variety to residential settings. The effects of acidity and fertility levels vary greatly between shrub types.

Vegetable and flower gardens are important to many individuals and businesses. However, the soils in areas where homes and businesses are established may not be suited to vegetables and flowers. Soils that have been disturbed by construction may not be productive unless topsoil is applied. Soils that have slopes of more than 8 percent have poor potential for vegetable gardening because of the hazard of erosion if the soils are tilled. Generally, steeper soils have a thinner surface layer. Flower gardening is possible in steeper areas, however, if mulches are used to help control erosion.

Incorporating composted tree leaves and grass clippings into the soil improves fertility, tilth, and moisture content. Additional information regarding vegetable crops is included under the heading “Crops and Pasture.”

Most garden plants grow best in soils that have a pH level between 5.5 and 6.5 and that have a high fertility level. Applying too much fertilizer or using fertilizers with the wrong combination of plant nutrients can be avoided by soil testing, which is the only effective method of determining how much and what type of fertilizer to apply. Information regarding soil testing can be obtained from the local office of the Cooperative Extension System, the Natural Resources Conservation Service, or from retail fertilizer businesses.

Trees are important in the landscaping of homesites. Information regarding the relationships between soils and trees is available in the section “Woodland Management and Productivity.” Special assistance regarding urban forestry can be obtained from the Alabama Forestry Commission.

Woodland Management and Productivity

Jerry L. Johnson, forester, Natural Resources Conservation Service, helped to prepare this section.

In Pickens County, commercial forestland covers 464,100 acres, or about 83 percent of the total land area. This acreage increased by about 36,600 acres from 1972 to 1990, primarily because of the conversion of cropland and pasture to woodland *(14, 15)*. Private landowners own about 64 percent of the woodland in the county, and the forest industry and private corporations own about 35 percent *(15)*.

The forest types in Pickens County include 164,500 acres of loblolly-shortleaf pine, 82,300 acres of oak-pine, 158,600 acres of oak-hickory, and 58,700 acres of oak-gum-cypress. The county has 229,100 acres of sawtimber, 111,600 acres of poletimber, and 123,400 acres of seedlings and saplings *(15)*.

Most of the soils in the Coastal Plain and the acid soils in the Blackland Prairie have a site index of 80 or higher for loblolly pine. The alkaline soils in the Blackland Prairie are not suited to pines. Examples are Faunsdale, Okolona, Sucarnoochee, and Sumter soils. Because of long periods of ponding, Fluvaquents and Una soils are also not suited to pines.

Table 8 can be used by woodland owners or forest managers in planning the use of soils for wood crops. Only those soils suitable for wood crops are listed. The table lists the ordination symbol for each soil. Soils assigned the same ordination symbol require the same general management and have about the same potential productivity.

The first part of the *ordination symbol*, a number, indicates the potential productivity of the soils for an indicator tree species. The number indicates the volume, in cubic meters per hectare per year, which the indicator species can produce in a pure stand under natural conditions. The number 1 indicates low potential productivity; 2 or 3, moderate; 4 or 5, moderately high; 6 to 8, high; 9 to 11, very high; and 12 to 39, extremely high. The second part of the symbol, a letter, indicates the major kind of soil limitation. The letter *R* indicates steep slopes; *W*, excess water in or on the soil; *T*, toxic substances in the soil; *D*, restricted

rooting depth; *C*, clay in the upper part of the soil; and *S*, sandy texture. The letter *A* indicates that limitations or restrictions are insignificant. If a soil has more than one limitation, the priority is as follows: R, W, C, and S.

In the table, *slight, moderate,* and *severe* indicate the degree of the major soil limitations to be considered in management.

Erosion hazard is the probability that damage will occur as a result of site preparation and cutting where the soil is exposed along roads, skid trails, and fire lanes and in log-handling areas. Forests that have been burned or overgrazed are also subject to erosion. Ratings of the erosion hazard are based on the percent of the slope. A rating of *slight* indicates that no particular prevention measures are needed under ordinary conditions. A rating of *moderate* indicates that erosion-control measures are needed in certain silvicultural activities. A rating of *severe* indicates that special precautions are needed to control erosion in most silvicultural activities.

Equipment limitation reflects the characteristics and conditions of the soil that restrict use of the equipment generally needed in woodland management or harvesting. The chief characteristics and conditions considered in the ratings are slope, stones on the surface, rock outcrops, soil wetness, and texture of the surface layer. A rating of *slight* indicates that under normal conditions the kind of equipment and season of use are not significantly restricted by soil factors. Soil wetness can restrict equipment use, but the wet period does not exceed 1 month. A rating of *moderate* indicates that equipment use is moderately restricted because of one or more soil factors. If the soil is wet, the wetness restricts equipment use for a period of 1 to 3 months. A rating of *severe* indicates that equipment use is severely restricted either as to the kind of equipment that can be used or the season of use. If the soil is wet, the wetness restricts equipment use for more than 3 months.

Seedling mortality refers to the death of naturally occurring or planted tree seedlings, as influenced by the kinds of soil, soil wetness, or topographic conditions. The factors used in rating the soils for seedling mortality are texture of the surface layer, depth to a seasonal high water table and the length of the period when the water table is high, rock fragments in the surface layer, effective rooting depth, and slope aspect. A rating of *slight* indicates that seedling mortality is not likely to be a problem under normal conditions. Expected mortality is less than 25 percent. A rating of *moderate* indicates that some problems from seedling mortality can be expected. Extra precautions are advisable. Expected mortality is 25 to 50 percent. A rating of *severe* indicates that seedling mortality is a serious problem. Extra precautions are important. Replanting may be necessary. Expected mortality is more than 50 percent.

Plant competition ratings indicate the degree to which undesirable species are expected to invade and grow when openings are made in the tree canopy. The main factors that affect plant competition are depth to the water table and the available water capacity. A rating of *slight* indicates that competition from undesirable plants is not likely to prevent natural regeneration or suppress the more desirable species. Planted seedlings can become established without undue competition. A rating of *moderate* indicates that competition may delay the establishment of desirable species. Competition may hamper stand development, but it will not prevent the eventual development of fully stocked stands. A rating of *severe* indicates that competition can be expected to prevent regeneration unless precautionary measures are applied.

The *potential productivity* of merchantable or *common trees* on a soil is expressed as a *site index* and as a *volume* number. The site index is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. Commonly grown trees are those that woodland managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability. The estimates of the productivity of the soils in this survey are based on data acquired in the county and on published data *(4, 5, 7, 13)*.

The *volume*, a number, is the yield likely to be produced by the most important trees. This number, expressed as cords per acre per year, indicates the amount of fiber produced in a fully stocked, even-aged, unmanaged stand.

The first species listed under *common trees* for a soil is the indicator species for that soil. It generally is the most common species on the soil and is the one that determines the ordination class.

Trees to plant are those that are suitable for commercial wood production.

Recreation

The soils of the survey area are rated in table 9 according to limitations that affect their suitability for recreation. The ratings are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic

quality, vegetation, access to water, potential water impoundment sites, and access to public sewer lines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation are also important. Soils subject to flooding are limited for recreational uses by the duration and intensity of flooding and the season when flooding occurs. In planning recreational facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

In the table, the degree of soil limitation is expressed as slight, moderate, or severe. *Slight* means that soil properties are generally favorable and that limitations are minor and easily overcome. *Moderate* means that limitations can be overcome or alleviated by planning, design, or special maintenance. *Severe* means that soil properties are unfavorable and that limitations can be offset only by costly soil reclamation, special design, intensive maintenance, limited use, or a combination of these measures.

The information in the table can be supplemented by other information in this survey, for example, interpretations for septic tank absorption fields in table 12 and interpretations for dwellings without basements and for local roads and streets in table 11.

Camp areas require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The best soils have mild slopes and are not wet or subject to flooding during the period of use. The surface has few or no stones or boulders, absorbs rainfall readily but remains firm, and is not dusty when dry. Strong slopes and stones or boulders can greatly increase the cost of constructing campsites.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The best soils for picnic areas are firm when wet, are not dusty when dry, are not subject to flooding during the period of use, and do not have slopes or stones or boulders that increase the cost of shaping sites or of building access roads and parking areas.

Playgrounds require soils that can withstand intensive foot traffic. The best soils are almost level and are not wet or subject to flooding during the season of use. The surface is free of stones and boulders, is firm after rains, and is not dusty when dry. If grading is needed, the depth of the soil over bedrock or a hardpan should be considered.

Paths and trails for hiking and horseback riding should require little or no cutting and filling. The best soils are not wet, are firm after rains, are not dusty when dry, and are not subject to flooding more than once a year during the period of use. They have moderate slopes and few or no stones or boulders on the surface.

Golf fairways are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. The best soils for use as golf fairways are firm when wet, are not dusty when dry, and are not subject to prolonged flooding during the period of use. They have moderate slopes and no stones or boulders on the surface. The suitability of the soil for tees or greens is not considered in rating the soils.

Wildlife Habitat

Tommy Counts, wildlife biologist, Natural Resources Conservation Service, helped to prepare this section.

Pickens County is dominantly a rural area that has suitable habitat for many kinds of wildlife. The county is about 83 percent woodland and is interspersed with areas of cultivated crops, pasture, and hay.

The common species of wild game found in the county are eastern wild turkey, bobwhite quail, white-tailed deer, eastern cottontail rabbit, fox squirrel, gray squirrel, mourning dove, Canada geese, and various species of ducks.

The nongame wildlife species in the county include armadillos, snakes, egrets, herons, crows, blackbirds, hawks, owls, and songbirds, such as bluebirds, cardinals, robins, thrushes, bluejays, meadowlarks, mockingbirds, sparrows, woodpeckers, vireos, warblers, and wrens.

In upland areas, the woodland generally consists of loblolly pine or mixed pines and hardwoods. On flood plains along streams and rivers, it generally consists of bottom land hardwoods. The forest types and their associated plant communities are of major importance to wildlife. Many of these woodland areas are managed primarily to provide habitat for various species of wildlife, such as the bobwhite quail, white-tailed deer, and turkey. Management practices that benefit wildlife—including prescribed burning, creating or maintaining openings in the woodland, and thinning stands—are common throughout the county.

Areas of cultivated crops, hay, and pasture are commonly interspersed with the woodland. The open areas are very important to many species of wildlife. The areas of cropland primarily are used for agricultural commodities, such as soybeans, corn, and cotton. The pasture and hayland areas generally are used for perennial grasses, such as bahiagrass, bermudagrass, tall fescue, and Johnsongrass.

Wetlands are used by many kinds of wildlife. Many of the furbearers and wading birds depend upon these areas almost exclusively. Natural depressions and areas of saturated soils along creeks and rivers, bodies of open water, and beaver ponds make up most of the wetland areas in the county. They occur mostly in areas that are adjacent to the Tombigbee and Sipsey Rivers and along major streams, such as Bear, Blubber, Coal Fire, Kincaide, Lubbub, and Sneads Creeks.

Furbearers in the county include beaver, muskrat, river otter, mink, bobcat, fox, opossum, coyote, raccoon, and skunk. Waterfowl and wading birds are numerous during certain times of the year in wetland areas, especially near Aliceville and Gainesville Lakes and backwater areas along the Tombigbee River.

The wildlife species in Pickens County that the Federal government has listed as threatened or endangered include the bald eagle, red-cockaded woodpecker, American alligator, Alabama sturgeon, and several species of mussels.

Soils affect the kind and amount of vegetation that is available to wildlife as food and cover. They also affect the construction of water impoundments. The kind and abundance of wildlife depend largely on the amount and distribution of food, cover, and water. Wildlife habitat can be created or improved by planting appropriate vegetation, by maintaining the existing plant cover, or by promoting the natural establishment of desirable plants.

In table 10, the soils in the survey area are rated according to their potential for providing habitat for various kinds of wildlife. This information can be used in planning parks, wildlife refuges, nature study areas, and other developments for wildlife; in selecting soils that are suitable for establishing, improving, or maintaining specific elements of wildlife habitat; and in determining the intensity of management needed for each element of the habitat.

The potential of the soil is rated good, fair, poor, or very poor. A rating of *good* indicates that the element or kind of habitat is easily established, improved, or maintained. Few or no limitations affect management, and satisfactory results can be expected. A rating of *fair* indicates that the element or kind of habitat can be established, improved, or maintained in most places. Moderately intensive management is required for satisfactory results. A rating of *poor* indicates that limitations are severe for the designated element or kind of habitat. Habitat can be created, improved, or maintained in most places, but management is difficult and must be intensive. A rating of *very poor* indicates that restrictions for the element or kind of habitat are very severe and that unsatisfactory results can be expected. Creating, improving, or maintaining habitat is impractical or impossible.

The elements of wildlife habitat are described in the following paragraphs.

Grain and seed crops are domestic grains and seed-producing herbaceous plants. Soil properties and features that affect the growth of grain and seed crops are depth of the root zone, texture of the surface layer, available water capacity, wetness, slope, surface stoniness, and flooding. Soil temperature and soil moisture are also considerations. Examples of grain and seed crops are corn, wheat, oats, grain sorghum, soybeans, rye, and millet.

Grasses and legumes are domestic perennial grasses and herbaceous legumes. Soil properties and features that affect the growth of grasses and legumes are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, flooding, and slope. Soil temperature and soil moisture are also considerations. Examples of grasses and legumes are bahiagrass, Johnsongrass, lespedeza, clover, chufa, and bermudagrass.

Wild herbaceous plants are native or naturally established grasses and forbs, including weeds. Soil properties and features that affect the growth of these plants are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, and flooding. Soil temperature and soil moisture are also considerations. Examples of wild herbaceous plants are dewberry, blackberry, goldenrod, crotons, beggarweed, pokeweed, paspalums, ragweed, and partridge pea.

Hardwood trees and woody understory produce nuts or other fruit, buds, catkins, twigs, bark, and foliage. Soil properties and features that affect the growth of hardwood trees and shrubs are depth of the root zone, available water capacity, and wetness. Examples of these plants are oak, yellow-poplar, blackcherry, sweetgum, apple, hawthorn, dogwood, persimmon, sassafras, sumac, holly, hickory, and blueberry. Examples of fruit-producing shrubs that are suitable for planting on soils rated *good* are pyracantha, autumn-olive, and crabapple.

Coniferous plants furnish browse and seeds. Soil properties and features that affect the growth of coniferous trees, shrubs, and ground cover are depth of the root zone, available water capacity, and wetness. Examples of coniferous plants are pine, cedar, and baldcypress.

Wetland plants are annual and perennial wild herbaceous plants that grow on moist or wet sites. Submerged or floating aquatic plants are excluded. Soil properties and features affecting wetland plants are texture of the surface layer, wetness, reaction, salinity,

slope, and surface stoniness. Examples of wetland plants are smartweed, wild millet, rushes, sedges, reeds, barnyardgrass, pondweed, cattails, and water shield.

Shallow water areas have an average depth of less than 5 feet. Some are naturally wet areas. Others are created by dams, levees, or other water-control structures. Soil properties and features affecting shallow water areas are depth to bedrock, wetness, surface stoniness, slope, and permeability. Examples of shallow water areas are marshes, waterfowl feeding areas, beaver ponds, and other ponds.

The habitat for various kinds of wildlife is described in the following paragraphs.

Habitat for openland wildlife consists of cropland, pasture, meadows, and areas that are overgrown with grasses, herbs, shrubs, and vines. These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants. Wildlife attracted to these areas include bobwhite quail, meadowlark, field sparrow, cottontail, red fox, coyote, armadillo, dove, killdeer, and hawks.

Habitat for woodland wildlife consists of areas of deciduous plants or coniferous plants or both and associated grasses, legumes, and wild herbaceous plants. Wildlife attracted to these areas include wild turkey, woodcock, thrushes, woodpeckers, squirrels, gray fox, raccoon, deer, bobcat, opossum, and skunk.

Habitat for wetland wildlife consists of open, marshy or swampy shallow water areas. Some of the wildlife attracted to such areas are ducks, geese, herons, shore birds, muskrat, mink, beaver, otter, turtles, rails, and kingfishers.

Aquaculture

H.D. Kelly, biologist, Natural Resources Conservation Service, helped to prepare this section.

Aquaculture is the controlled production and harvest of animals or plants grown in or on water. In Pickens County, catfish farming (channel catfish) and sport fish production (bass and bream) are the most common types of aquaculture. The channel catfish, *Ictulurus punctatus*, can be produced either in cages within ponds or in open ponds. Open pond culture is the only method currently used in the county. The county has more than 2,000 acres of bass and bream ponds and more than 300 acres of catfish ponds. Other species of fish and crustaceans (crawfish) can be produced in ponds, and fish farming could provide additional income for some landowners.

Some of the tables included in this survey can help in the evaluation of potential pond sites. Table 14, for example, lists soil limitations affecting pond reservoir areas and embankments, dikes, and levees. Indications of flooding frequency and water table levels are in table 17. These tables and the detailed soil maps can help in the evaluation of the pond-building and water-retaining potential of a location. Once a possible pond site is selected, additional soil borings should be made.

An understanding of soil characteristics is important in determining the potential of a pond site. The Faunsdale, Okolona, Sucarnoochee, Sumter, and Vaiden soils of the Blackland Prairie and the Luverne and Sacul soils of the Coastal Plain are generally suited to pond construction.

The construction of buildings and the accessibility of the area are important considerations in evaluating a pond site. Depending upon the size and planned use of the site, a road system may be needed to accommodate harvest trucks. Large trucks are used in commercial operations. Feed trucks and similar equipment also require suitable access to the fish farm. If the farm is planned for fingerling production, a hatchery building will probably be on the site. Other buildings may be needed to store equipment or feed. Table 11 gives soil limitations affecting roads and building sites.

The quality of water in a pond is influenced by the soil. Several variables of water quality affect the production of fish. Total alkalinity, for example, is directly influenced by the soil. Total alkalinity values ranging from 30 to 150 parts per million are preferred. Fish production can be acceptable in ponds that have a low alkalinity level—less than 20 parts per million—provided that the fish are well fed. Other complicating factors, however, affect fish production when alkalinity values are below 20 parts per million. The application of agricultural lime can commonly prevent production problems associated with low alkalinity values.

The soil in pond basins should be analyzed before the basins are limed and filled with water. The amount of lime needed should be based on the results of the analysis, and the lime should be applied before the ponds are filled with water. Thereafter, annual applications of lime, even in ponds full of water, should range from 20 to 25 percent of the original application to maintain desirable levels of alkalinity. The importance of proper alkalinity levels cannot be overemphasized. Some soils that are suitable for pond sites in the county require applications of lime. Ponds constructed within the watershed of the Blackland Prairie generally do not require additional lime.

The source and amounts of water to be used should also be considered when evaluating a site for a pond or fish farm. For example, if runoff water is to be used,

the watershed should be evaluated. Technical assistance regarding site and production problems is available from the local office of the Natural Resources Conservation Service or the Cooperative Extension System.

Engineering

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. Ratings are given for building site development, sanitary facilities, construction materials, and water management. The ratings are based on observed performance of the soils and on the estimated data and test data in the "Soil Properties" section.

Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil within a depth of 5 or 6 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations should be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about grain-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 or 6 feet of the surface, soil wetness, depth to a seasonal high water table, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kinds of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, earthfill, and topsoil; plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the "Glossary."

Building Site Development

Table 11 shows the degree and kind of soil limitations that affect shallow excavations, dwellings with and without basements, small commercial buildings, local roads and streets, and lawns and landscaping. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required. Special feasibility studies may be required where the soil limitations are severe.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for basements, graves, utility lines, open ditches, and other purposes. The ratings are based on soil properties, site features, and observed performance of the soils. The ease of digging, filling, and compacting is affected by the depth to bedrock or a very firm dense layer; stone content; soil texture; and slope. The time of the year that excavations can be made is affected by the depth to a seasonal high water table and the susceptibility of the soil to flooding. The resistance of the excavation walls or banks to sloughing or caving is affected by soil texture and depth to the water table.

Dwellings and *small commercial buildings* are structures built on shallow foundations on undisturbed soil. The load limit is the same as that for single-family dwellings no higher than three stories. Ratings are

made for small commercial buildings without basements, for dwellings with basements, and for dwellings without basements. The ratings are based on soil properties, site features, and observed performance of the soils. A high water table, flooding, shrinking and swelling, and organic layers can cause the movement of footings. A high water table, depth to bedrock, large stones, slope, and flooding affect the ease of excavation and construction. Landscaping and grading that require cuts and fills of more than 5 or 6 feet are not considered.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or stabilized soil material; and a flexible or rigid surface. Cuts and fills are generally limited to less than 6 feet. The ratings are based on soil properties, site features, and observed performance of the soils. Depth to bedrock, a high water table, flooding, large stones, and slope affect the ease of excavating and grading. Soil strength (as inferred from the engineering classification of the soil), shrink-swell potential, frost action potential, and depth to a high water table affect the traffic-supporting capacity.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. The ratings are based on soil properties, site features, and observed performance of the soils. Soil reaction, a high water table, depth to bedrock, the available water capacity in the upper 40 inches, and the content of salts, sodium, and sulfidic materials affect plant growth. Flooding, wetness, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer affect trafficability after vegetation is established.

Sanitary Facilities

Table 12 shows the degree and kind of soil limitations that affect septic tank absorption fields, sewage lagoons, and sanitary landfills. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required.

The table also shows the suitability of the soils for use as daily cover for landfill. A rating of *good* indicates that soil properties and site features are favorable for the use and good performance and low maintenance can be expected; *fair* indicates that soil properties and site features are moderately favorable for the use and one or more soil properties or site features make the soil less desirable than the soils rated good; and *poor* indicates that one or more soil properties or site features are unfavorable for the use and overcoming the unfavorable properties requires special design, extra maintenance, or costly alteration.

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 72 inches is evaluated. The ratings are based on soil properties, site features, and observed performance of the soils. Permeability, a high water table, depth to bedrock, and flooding affect absorption of the effluent. Large stones and bedrock interfere with installation.

Unsatisfactory performance of septic tank absorption fields, including excessively slow absorption of effluent, surfacing of effluent, and hillside seepage, can affect public health. Ground water can be polluted if highly permeable sand and gravel or fractured bedrock is less than 4 feet below the base of the absorption field, if slope is excessive, or if the water table is near the surface. There must be unsaturated soil material beneath the absorption field to filter the effluent effectively. Many local ordinances require that this material be of a certain thickness.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Lagoons generally are designed to hold the sewage within a depth of 2 to 5 feet. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water.

The table gives ratings for the natural soil that makes up the lagoon floor. The surface layer and, generally, 1 or 2 feet of soil material below the surface layer are excavated to provide material for the embankments. The ratings are based on soil properties, site features, and observed performance of the soils. Considered in the ratings are slope, permeability, a high water table, depth to bedrock, flooding, large stones, and content of organic matter.

Excessive seepage resulting from rapid permeability in the soil or a water table that is high enough to raise the level of sewage in the lagoon causes a lagoon to function unsatisfactorily. Pollution results if seepage is excessive or if floodwater overtops the lagoon. A high

content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope and bedrock can cause construction problems, and large stones can hinder compaction of the lagoon floor.

Sanitary landfills are areas where solid waste is disposed of by burying it in soil. There are two types of landfill—trench and area. In a trench landfill, the waste is placed in a trench. It is spread, compacted, and covered daily with a thin layer of soil excavated at the site. In an area landfill, the waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site.

Both types of landfill must be able to bear heavy vehicular traffic. Both types involve a risk of ground-water pollution. Ease of excavation and revegetation should be considered.

The ratings in the table are based on soil properties, site features, and observed performance of the soils. Permeability, depth to bedrock, a high water table, slope, and flooding affect both types of landfill. Texture, stones and boulders, highly organic layers, soil reaction, and content of salts and sodium affect trench landfills. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, a limitation rated slight or moderate may not be valid. Onsite investigation is needed.

Daily cover for landfill is the soil material that is used to cover compacted solid waste in an area sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste.

Soil texture, wetness, coarse fragments, and slope affect the ease of removing and spreading the material during wet and dry periods. Loamy or silty soils that are free of large stones or excess gravel are the best cover for a landfill. Clayey soils are sticky or cloddy and are difficult to spread; sandy soils are subject to wind erosion.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over bedrock or the water table to permit revegetation. The soil material used as the final cover for a landfill should be suitable for plants. The surface layer generally has the best workability, more organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

Construction Materials

Table 13 gives information about the soils as a source of roadfill, sand, gravel, and topsoil. The soils are rated *good, fair,* or *poor* as a source of roadfill and topsoil. They are rated as a *probable* or *improbable* source of sand and gravel. The ratings are based on soil properties and site features that affect the removal of the soil and its use as construction material. Normal compaction, minor processing, and other standard construction practices are assumed. Each soil is evaluated to a depth of 5 or 6 feet.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the soil material below the surface layer to a depth of 5 or 6 feet. It is assumed that soil layers will be mixed during excavating and spreading. Many soils have layers of contrasting suitability within their profile. The table showing engineering index properties provides detailed information about each soil layer. This information can help to determine the suitability of each layer for use as roadfill. The performance of soil after it is stabilized with lime or cement is not considered in the ratings.

The ratings are based on soil properties, site features, and observed performance of the soils. The thickness of suitable material is a major consideration. The ease of excavation is affected by large stones, a high water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the engineering classification of the soil) and shrink-swell potential.

Soils rated *good* contain significant amounts of sand or gravel or both. They have at least 5 feet of suitable material, a low shrink-swell potential, few cobbles and stones, and slopes of 15 percent or less. Depth to the water table is more than 3 feet. Soils rated *fair* are more than 35 percent silt- and clay-sized particles and have a plasticity index of less than 10. They have a moderate shrink-swell potential, slopes of 15 to 25 percent, or many stones. Depth to the water table is 1 to 3 feet. Soils rated *poor* have a plasticity index of more than 10, a high shrink-swell potential, many stones, or slopes of more than 25 percent. They are wet and have a water table at a depth of less than 1 foot. They may have layers of suitable material, but the material is less than 3 feet thick.

Sand and *gravel* are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction. Specifications for each use vary widely. In the table, only the probability of finding material in suitable quantity is evaluated. The suitability of the material for specific

purposes is not evaluated, nor are factors that affect excavation of the material.

The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the engineering classification of the soil), the thickness of suitable material, and the content of rock fragments. Kinds of rock, acidity, and stratification are given in the soil series descriptions. Gradation of grain sizes is given in the table on engineering index properties.

A soil rated as a probable source has a layer of clean sand or gravel or a layer of sand or gravel that is up to 12 percent silty fines. This material must be at least 3 feet thick and less than 50 percent, by weight, large stones. All other soils are rated as an improbable source. Coarse fragments of soft bedrock, such as shale and chalk, are not considered to be sand and gravel.

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area.

Plant growth is affected by toxic material and by such properties as soil reaction, available water capacity, and fertility. The ease of excavating, loading, and spreading is affected by rock fragments, slope, a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, a water table, rock fragments, bedrock, and toxic material.

Soils rated *good* have friable, loamy material to a depth of at least 40 inches. They are free of stones and cobbles, have little or no gravel, and have slopes of less than 8 percent. They are low in content of soluble salts, are naturally fertile or respond well to fertilizer, and are not so wet that excavation is difficult.

Soils rated *fair* are sandy soils, loamy soils that have a relatively high content of clay, soils that have only 20 to 40 inches of suitable material, soils that have an appreciable amount of gravel, stones, or soluble salts, or soils that have slopes of 8 to 15 percent. The soils are not so wet that excavation is difficult.

Soils rated *poor* are very sandy or clayey, have less than 20 inches of suitable material, have a large amount of gravel, stones, or soluble salts, have slopes of more than 15 percent, or have a seasonal high water table at or near the surface.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

Water Management

Table 14 gives information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas and for embankments, dikes, and levees. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and are easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increase in construction costs, and possibly increased maintenance are required.

This table also gives for each soil the restrictive features that affect drainage, irrigation, terraces and diversions, and grassed waterways.

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A high water table affects the amount of usable material. It also affects trafficability.

Drainage is the removal of excess surface and subsurface water from the soil. How easily and effectively the soil is drained depends on the depth to bedrock or to other layers that affect the rate of water movement; permeability; depth to a high water table or

depth of standing water if the soil is subject to ponding; slope; susceptibility to flooding; subsidence of organic layers; and the potential for frost action. Excavating and grading and the stability of ditchbanks are affected by depth to bedrock, large stones, slope, and the hazard of cutbanks caving. The productivity of the soil after drainage is adversely affected by extreme acidity or by toxic substances in the root zone, such as salts, sodium, and sulfur. Availability of drainage outlets is not considered in the ratings.

Irrigation is the controlled application of water to supplement rainfall and support plant growth. The design and management of an irrigation system are affected by depth to the water table, the need for drainage, flooding, available water capacity, intake rate, permeability, erosion hazard, and slope. The construction of a system is affected by large stones and depth to bedrock. The performance of a system is affected by the depth of the root zone, the amount of salts or sodium, and soil reaction.

Terraces and diversions are embankments or a combination of channels and ridges constructed across a slope to control erosion and conserve moisture by intercepting runoff. Slope, wetness, large stones, and depth to bedrock affect the construction of terraces and diversions. A restricted rooting depth, a severe hazard of wind erosion or water erosion, an excessively coarse texture, and restricted permeability adversely affect maintenance.

Grassed waterways are natural or constructed channels, generally broad and shallow, that conduct surface water to outlets at a nonerosive velocity. Large stones, wetness, slope, and depth to bedrock affect the construction of grassed waterways. A hazard of wind erosion, low available water capacity, restricted rooting depth, toxic substances such as salts and sodium, and restricted permeability adversely affect the growth and maintenance of the grass after construction.

Soil Properties

Data relating to soil properties are collected during the course of the soil survey. The data and the estimates of soil and water features, listed in tables, are explained on the following pages.

Soil properties are determined by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine grain-size distribution, plasticity, and compaction characteristics. These results are reported in table 20.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help to characterize key soils.

The estimates of soil properties shown in the tables include the range of grain-size distribution and Atterberg limits, the engineering classification, and the physical and chemical properties of the major layers of each soil. Pertinent soil and water features also are given.

Engineering Index Properties

Table 15 gives estimates of the engineering classification and of the range of index properties for the major layers of each soil in the survey area. Most soils have layers of contrasting properties within the upper 5 or 6 feet.

Depth to the upper and lower boundaries of each layer is indicated. The range in depth and information on other properties of each layer are given for each soil series under the heading “Soil Series and Their Morphology.”

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. “Loam,” for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is as much as about 15 percent, an appropriate modifier is added, for example, “gravelly.” Textural terms are defined in the “Glossary.”

Classification of the soils is determined according to the Unified soil classification system *(3)* and the system adopted by the American Association of State Highway and Transportation Officials *(2)*.

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to grain-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of grain-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest. The AASHTO classification for soils tested, with group index numbers in parentheses, is given in table 20.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074

millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

The estimates of grain-size distribution, liquid limit, and plasticity index are generally rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is omitted in the table.

Physical and Chemical Properties

Table 16 shows estimates of some characteristics and features that affect soil behavior. These estimates are given for the major layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In this table, the estimated clay content of each major soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The amount and kind of clay greatly affect the fertility and physical condition of the soil. They determine the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at $^{1}/_{3}$-bar moisture tension. Weight is determined after drying the soil at 105 degrees C. In this table, the estimated moist bulk density of each major soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. A bulk density of more than 1.6 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Permeability refers to the ability of a soil to transmit water or air. The estimates indicate the rate of downward movement of water when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each major soil layer. The capacity varies, depending on soil properties that affect the retention of water and the depth of the root zone. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Soil reaction is a measure of acidity or alkalinity and is expressed as a range in pH values. The range in pH of each major horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Shrink-swell potential is the potential for volume change in a soil with a loss or gain in moisture. Volume change occurs mainly because of the interaction of clay minerals with water and varies with the amount and type of clay minerals in the soil. The size of the load on the soil and the magnitude of the change in soil moisture content influence the amount of swelling of soils in place. Laboratory measurements of swelling of undisturbed clods were made for many soils. For others, swelling was estimated on the basis of the kind and amount of clay minerals in the soil and on measurements of similar soils.

If the shrink-swell potential is rated moderate to very high, shrinking and swelling can cause damage to buildings, roads, and other structures. Special design is often needed.

Shrink-swell potential classes are based on the change in length of an unconfined clod as moisture content is increased from air-dry to field capacity. The classes are *low*, a change of less than 3 percent; *moderate*, 3 to 6 percent; *high*, more than 6 percent; and *very high*, greater than 9 percent.

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation

(USLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter (up to 4 percent) and on soil structure and permeability. Values of K range from 0.02 to 0.64. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In the table, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be maintained or increased by returning crop residue to the soil. Organic matter affects the available water capacity, infiltration rate, and tilth. It is a source of nitrogen and other nutrients for crops.

Soil and Water Features

Table 17 gives estimates of various soil and water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

Flooding, the temporary inundation of an area, is caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

The table gives the frequency and duration of flooding and the time of year when flooding is most likely.

Frequency, duration, and probable dates of occurrence are estimated. Frequency is expressed as none, rare, occasional, and frequent. *None* means that flooding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs, on the average, once or less in 2 years (the chance of flooding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of flooding is more than 50 percent in any year). Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 days to 1 month, and *very long* if more than 1 month. Probable dates are expressed in months. About two-thirds to three-fourths of all flooding occurs during the stated period.

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

High water table (seasonal) is the highest level of a saturated zone in the soil in most years. The estimates are based mainly on observations of the water table at selected sites and on the evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. Indicated in the table are the depth to the seasonal high water table; the kind of water table—that is, perched or apparent; and the months of the year that the water table commonly is high. A water table that is seasonally high for less than 1 month is not indicated in the table.

An *apparent* water table is a thick zone of free water in the soil. It is indicated by the level at which water

stands in an uncased borehole after adequate time is allowed for adjustment in the surrounding soil. A *perched* water table is water standing above an unsaturated zone. In places an upper, or perched, water table is separated from a lower one by a dry zone.

Two numbers in the column showing depth to the water table indicate the normal range in depth to a saturated zone. Depth is given to the nearest half foot. The first numeral in the range indicates the highest water level. A plus sign preceding the range in depth indicates that the water table is above the surface of the soil. “More than 6.0” indicates that the water table is below a depth of 6 feet or that it is within a depth of 6 feet for less than a month.

Depth to bedrock is given if bedrock is within a depth of 5 feet. The depth is based on many soil borings and on observations during soil mapping. The rock is either soft or hard. If the rock is soft or fractured, excavations can be made with trenching machines, backhoes, or small rippers. If the rock is hard or massive, blasting or special equipment generally is needed for excavation.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that dissolves or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than steel in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low, moderate,* or *high,* is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion is also expressed as *low, moderate,* or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

Physical and Chemical Analyses of Selected Soils

The results of physical analyses of several typical pedons in the survey area are given in table 18 and the results of chemical analyses are given in table 19. The data are for soils sampled at carefully selected sites. Unless otherwise indicated, the pedons are typical of the series. They are described in the section “Soil Series and Their Morphology.” Soil samples were analyzed by the Agronomy and Soils Clay Mineralogy Laboratory, Auburn University, Auburn, Alabama.

Most determinations, except those for grain-size analysis and bulk density, were made on soil material smaller than 2 millimeters in diameter. Measurements reported as percent or quantity of unit weight were calculated on an ovendry basis. The methods used in obtaining the data are indicated in the list that follows. The codes in parentheses refer to published methods *(8, 16)*.

Sand—(0.05-2.0 mm fraction) weight percentages of material less than 2 mm (3A1).

Silt—(0.002-0.05 mm fraction) pipette extraction, weight percentages of all material less than 2 mm (3A1).

Clay—(fraction less than 0.002 mm) pipette extraction, weight percentages of material less than 2 mm (3A1).

Extractable bases—method of Hajek, Adams, and Cope *(8)*.

Extractable acidity—method of Hajek, Adams, and Cope *(8)*.

Cation-exchange capacity—sum of cations (5A3a).

Base saturation—method of Hajek, Adams, and Cope *(8)*.

Reaction (pH)—1:1 water dilution (8C1f).

Engineering Index Test Data

Table 20 shows laboratory test data for several pedons sampled at carefully selected sites in the survey area. The pedons are representative of the series described in the section “Soil Series and Their Morphology.” The soil samples were tested by the Alabama Highway Department, Bureau of Materials and Tests, Montgomery, Alabama.

The testing methods generally are those of the American Association of State Highway and Transportation Officials (AASHTO) or the American Society for Testing and Materials (ASTM).

The tests and methods are AASHTO classification—M 145 (AASHTO), D 3282 (ASTM); Unified classification—D 2487 (ASTM); Mechanical analysis—T 88 (AASHTO), D 422 (ASTM), D 2217 (ASTM); Liquid limit—T 89 (AASHTO), D 4318 (ASTM); Plasticity index—T 90 (AASHTO), D 4318 (ASTM); Moisture density—T 99 (AASHTO), D 698 (ASTM); and Specific gravity—T 100 (AASHTO), D 854 (ASTM).

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories *(12, 18)*. Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. Table 21 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

ORDER. Twelve soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol*. An example is Ultisol.

SUBORDER. Each order is divided into suborders primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Udult (*Ud*, meaning humid, plus *ult*, from Ultisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; type of saturation; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Hapludults (*Hapl*, meaning minimal horizonation, plus *udult*, the suborder of the Ultisols that has a udic moisture regime).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic subgroup is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other taxonomic class. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective *Typic* identifies the subgroup that typifies the great group. An example is Typic Hapludults.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle size, mineral content, clay activity, soil temperature regime, soil depth, and reaction. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine-loamy, siliceous, semiactive, thermic Typic Hapludults.

SERIES. The series consists of soils within a family that have horizons similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile. The soils of the Cahaba series are fine-loamy, siliceous, semiactive, thermic Typic Hapludults.

Soil Series and Their Morphology

In this section, each soil series recognized in the survey area is described. Characteristics of the soil and the material in which it formed are identified for each series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the “Soil Survey Manual” *(17)*. Many of the technical terms used in the descriptions are defined in “Soil Taxonomy” *(12)* and in “Keys to Soil Taxonomy” *(18)*. Unless otherwise indicated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series.

The map units of each soil series are described in the section “Detailed Soil Map Units.”

Annemaine Series

The Annemaine series consists of very deep, moderately well drained soils that formed in stratified clayey and loamy alluvium. These soils are on low stream terraces and are subject to occasional flooding. Slopes range from 0 to 2 percent. These soils are fine, mixed, semiactive, thermic Aquic Hapludults.

Annemaine soils are commonly associated on the landscape with Bigbee, Cahaba, Columbus, and Myatt

soils. Bigbee, Cahaba, and Columbus soils are in the slightly higher positions on the low terraces. Bigbee soils are sandy throughout. Cahaba and Columbus soils are fine-loamy. The poorly drained Myatt soils are in the lower, more concave positions.

Typical pedon of Annemaine loam, 0 to 2 percent slopes, occasionally flooded; about 1.5 miles south of Vienna, 1,015 feet north and 510 feet west of the southeast corner of sec. 4, T. 23 N., R. 2 W.

Ap—0 to 3 inches; dark brown (10YR 4/3) loam; weak fine granular structure; very friable; many fine and medium roots; strongly acid; clear smooth boundary.

E—3 to 8 inches; yellowish brown (10YR 5/4) loam; weak fine granular structure; friable; many fine roots; strongly acid; clear smooth boundary.

Bt1—8 to 22 inches; yellowish red (5YR 5/6) silty clay; moderate medium subangular blocky structure; firm; common fine and medium roots; few faint clay films on faces of peds; common fine flakes of mica; very strongly acid; clear wavy boundary.

Bt2—22 to 31 inches; yellowish red (5YR 5/6) silty clay; moderate medium subangular blocky structure; firm; few fine and medium roots; common distinct clay films on faces of peds; common fine flakes of mica; common medium distinct strong brown (7.5YR 4/6) and yellowish brown (10YR 5/4) masses of iron accumulation; common medium prominent light brownish gray (10YR 6/2) iron depletions; very strongly acid; clear wavy boundary.

Bt3—31 to 39 inches; yellowish red (5YR 5/6) clay loam; moderate medium subangular blocky structure; firm; common distinct clay films on faces of peds; common fine flakes of mica; many fine and medium distinct strong brown (7.5YR 5/6) masses of iron accumulation; many fine and medium distinct light brownish gray (10YR 6/2) iron depletions; very strongly acid; clear wavy boundary.

BC—39 to 44 inches; 40 percent yellowish red (5YR 4/6), 30 percent strong brown (7.5YR 5/6), and 30 percent light brownish gray (10YR 6/2) clay loam; weak coarse subangular blocky structure; firm; few fine roots; many fine flakes of mica; areas of yellowish red and strong brown are iron accumulations; areas of light brownish gray are iron depletions; very strongly acid; gradual wavy boundary.

C1—44 to 52 inches; 60 percent strong brown (7.5YR 4/6) and 40 percent light brownish gray (10YR 6/2) sandy clay loam; massive; friable; few fine roots; many fine flakes of mica; areas of strong brown are iron accumulations; areas of light brownish gray are iron depletions; very strongly acid; abrupt wavy boundary.

C2—52 to 65 inches; stratified strong brown (7.5YR 5/6) sand and light brownish gray (10YR 6/2) loamy sand; massive; very friable; areas of light brownish gray are iron depletions; very strongly acid.

The thickness of the solum ranges from 40 to more than 60 inches. Reaction is very strongly acid or strongly acid throughout the profile, except in areas where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 3 to 5, and chroma of 2 to 4.

The E horizon, if it occurs, has hue of 10YR, value of 5 or 6, and chroma of 2 to 4. The texture is sandy loam, fine sandy loam, loam, or silt loam.

The Bt horizon has hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 6 to 8. The number of redoximorphic depletions in shades of gray and redoximorphic accumulations in shades of brown, yellow, and red ranges from none to common in the upper part of the horizon and from few to many in the lower part. The texture is silty clay loam, clay loam, silty clay, or clay.

The BC horizon, if it occurs, has the same range in hue, value, and chroma as the Bt horizon; or it has no dominant matrix color and is multicolored in shades of red, brown, yellow, and gray. The texture is sandy clay loam, loam, or clay loam.

The C horizon has hue of 2.5YR to 10YR, value of 4 to 6, and chroma of 3 to 8; or it has no dominant matrix color and is multicolored in shades of red, brown, or gray. The texture is dominantly sand, loamy sand, sandy loam, loam, or sandy clay loam. It commonly is stratified with finer- and coarser-textured materials.

Bama Series

The Bama series consists of very deep, well drained soils that formed in loamy sediments. These soils are on summits of high terraces. Slopes range from 0 to 5 percent. These soils are fine-loamy, siliceous, subactive, thermic Typic Paleudults.

Bama soils are commonly associated on the landscape with Lucedale, Savannah, and Smithdale soils. Lucedale soils are in landscape positions similar to those of the Bama soils. They have dark red colors throughout the argillic horizon. Savannah soils are in lower positions than the Bama soils. They have brownish colors in the subsoil and have a fragipan. Smithdale soils are on side slopes at lower elevations than the Bama soils. They have a reduction in clay content of 20 percent or more within a depth of 60 inches.

Typical pedon of Bama loam, 0 to 2 percent slopes;

about 2.2 miles southwest of Aliceville, 3,825 feet north and 1,900 feet east of the southwest corner of sec. 2, T. 24 N., R. 2 W.

Ap—0 to 5 inches; dark brown (7.5YR 4/4) loam; moderate fine granular structure; friable; slightly acid; clear smooth boundary.

Bt1—5 to 22 inches; red (2.5YR 5/6) clay loam; moderate medium subangular blocky structure; friable; few fine roots; common faint clay films on faces of peds; moderately acid; gradual wavy boundary.

Bt2—22 to 43 inches; red (2.5YR 5/6) clay loam; moderate medium subangular blocky structure; friable; few fine roots; common faint clay films on faces of peds; moderately acid; gradual wavy boundary.

Bt3—43 to 54 inches; dark red (2.5YR 4/6) sandy clay loam; moderate medium subangular blocky structure; friable; few fine and very fine roots; common faint clay films on faces of peds; very strongly acid; gradual wavy boundary.

Bt4—54 to 65 inches; dark red (2.5YR 4/6) sandy clay loam; weak coarse subangular blocky structure; friable; few very fine roots; few faint clay films on faces of peds; very strongly acid.

The solum is more than 60 inches thick. Reaction ranges from very strongly acid to slightly acid in the Ap horizon, from very strongly acid to moderately acid in the upper part of the Bt horizon, and is very strongly acid or strongly acid in the lower part of the Bt horizon.

The Ap horizon has hue of 7.5YR or 10YR, value of 3 or 4, and chroma of 2 to 4. The texture is loam or sandy loam.

The upper part of the Bt horizon has hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 6 to 8. The lower part, below a depth of 40 inches, dominantly has colors similar to those of the upper part but may also have hue of 2.5YR, value of 3, and chroma of 4 to 6. The texture is sandy clay loam, loam, or clay loam.

Bigbee Series

The Bigbee series consists of very deep, excessively drained soils that formed in sandy alluvium. These soils are on high parts of natural levees and on low terraces. They are subject to occasional flooding. Slopes range from 0 to 5 percent. These soils are thermic, coated Typic Quartzipsamments.

Bigbee soils are commonly associated on the landscape with Annemaine, Cahaba, Columbus, and Riverview soils. Annemaine soils are in the lower positions on the low terraces. They have a clayey argillic horizon. Cahaba and Columbus soils are in slightly higher positions than the Bigbee soils and have a fine-loamy argillic horizon. Riverview soils are in positions similar to those of the Bigbee soils on natural levees and are fine-loamy.

Typical pedon of Bigbee loamy sand, 0 to 5 percent slopes, occasionally flooded; about 5 miles west of Aliceville, 2,030 feet east and 320 feet north of the southwest corner of sec. 29, T. 22 S., R. 16 W.

Ap—0 to 6 inches; very dark grayish brown (10YR 3/2) loamy sand; single grained; loose; many fine and medium roots; very strongly acid; abrupt smooth boundary.

C1—6 to 23 inches; dark brown (7.5YR 4/4) loamy sand; single grained; loose; few fine roots; very strongly acid; gradual smooth boundary.

C2—23 to 41 inches; dark yellowish brown (10YR 4/6) loamy sand; single grained; loose; very strongly acid; gradual smooth boundary.

C3—41 to 54 inches; brownish yellow (10YR 6/6) sand; single grained; loose; common spots and streaks of very pale brown (10YR 7/4) sand; very strongly acid; gradual smooth boundary.

C4—54 to 68 inches; very pale brown (10YR 7/4) sand; single grained; loose; common medium distinct brownish yellow (10YR 6/6) and strong brown (7.5YR 5/6) masses of iron accumulation; very strongly acid; gradual smooth boundary.

C5—68 to 88 inches; very pale brown (10YR 8/3) sand; single grained; loose; about 3 percent fine quartz pebbles; common medium distinct brownish yellow (10YR 6/6) masses of iron accumulation; very strongly acid.

The sandy sediments are more than 80 inches thick. Reaction ranges from very strongly acid to moderately acid throughout the profile, except in areas where lime has been added.

The A or Ap horizon has hue of 10YR, value of 3 to 5, and chroma of 2 to 4.

The upper part of the C horizon has hue of 10YR or 7.5YR, value of 4 to 7, and chroma of 4 to 6. The texture is loamy sand, sand, or fine sand. The lower part of the horizon has hue of 10YR, value of 6 to 8, and chroma of 1 to 6. It has few or common redoximorphic accumulations in shades of brown and yellow and few or common redoximorphic depletions in shades of gray.

Cahaba Series

The Cahaba series consists of very deep, well drained soils that formed in loamy and sandy alluvium. These soils are on low stream terraces and are subject

to occasional flooding. Slopes range from 0 to 2 percent. These soils are fine-loamy, siliceous, semiactive, thermic Typic Hapludults.

Cahaba soils are commonly associated on the landscape with Annemaine, Bigbee, Columbus, and Myatt soils. Annemaine soils are in the slightly lower positions on the low terraces and have a clayey argillic horizon. Bigbee soils are also in the slightly lower positions on the low terraces and are on high parts of natural levees. They are sandy throughout the profile. The moderately well drained Columbus soils are in the slightly lower, less convex positions on the low terraces and have a hue of 10YR or yellower throughout the subsoil. The poorly drained Myatt soils are in slightly lower, more concave positions than the Cahaba soils and have a grayish subsoil.

Typical pedon of Cahaba sandy loam, 0 to 2 percent slopes, occasionally flooded; about 4 miles southwest of Aliceville, 1,100 feet north and 1,900 feet west of the southeast corner of sec. 4, T. 24 N., R. 2 W.

Ap—0 to 6 inches; brown (10YR 4/3) sandy loam; weak fine granular structure; friable; many fine and medium roots; very strongly acid; abrupt smooth boundary.

BA—6 to 10 inches; strong brown (7.5YR 5/6) sandy loam; weak medium subangular blocky structure; friable; common fine and medium roots; very strongly acid; gradual wavy boundary.

Bt1—10 to 26 inches; yellowish red (5YR 5/6) clay loam; moderate medium subangular blocky structure; friable; common fine and medium roots; common faint clay films on faces of peds; very strongly acid; gradual smooth boundary.

Bt2—26 to 31 inches; yellowish red (5YR 4/6) sandy clay loam; moderate medium subangular blocky structure; friable; common fine roots; common faint clay films on faces of peds; very strongly acid; clear smooth boundary.

Bt3—31 to 38 inches; yellowish red (5YR 5/8) sandy loam; weak medium subangular blocky structure; friable; few fine roots; few faint clay films on faces of peds; very strongly acid; clear smooth boundary.

C1—38 to 53 inches; strong brown (7.5YR 5/6) loamy sand; massive; very friable; many fine flakes of mica; very strongly acid; gradual wavy boundary.

C2—53 to 65 inches; yellowish brown (10YR 5/6) loamy sand; massive; very friable; many fine flakes of mica; very strongly acid.

The thickness of the solum ranges from 36 to 60 inches. Reaction ranges from very strongly acid to moderately acid throughout the profile, except in areas where lime has been applied.

The Ap horizon has hue of 10YR, value of 3 or 4, and chroma of 2 to 4.

The BA or BE horizon, if it occurs, has hue of 5YR or 7.5YR, value of 4 or 5, and chroma of 4 to 6. The texture is fine sandy loam, sandy loam, loam, or sandy clay loam.

The Bt horizon has hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 6 to 8. The texture is sandy clay loam, clay loam, or loam.

The C horizon has hue of 2.5YR to 10YR, value of 4 to 6, and chroma of 4 to 8. The texture is sandy loam, fine sandy loam, or loamy sand. In many pedons the horizon has thin strata of finer- and coarser-textured material. In some pedons it has thin strata of gravel below a depth of 40 inches.

Columbus Series

The Columbus series consists of very deep, moderately well drained soils that formed in loamy alluvium. These soils are on low stream terraces and are subject to occasional flooding. Slopes range from 0 to 2 percent. These soils are fine-loamy, siliceous, semiactive, thermic Aquic Hapludults.

Columbus soils are commonly associated on the landscape with Annemaine, Bigbee, Cahaba, and Myatt soils. Annemaine soils are in the slightly lower positions on the low terraces and have a clayey argillic horizon. Bigbee and Cahaba soils are in the slightly higher, more convex positions on the low terraces. Bigbee soils are sandy throughout. The well drained Cahaba soils have hue of 5YR or redder in the upper part of the argillic horizon. The poorly drained Myatt soils are in slightly lower, more concave positions than the Columbus soils and have a grayish subsoil.

Typical pedon of Columbus loam, 0 to 2 percent slopes, occasionally flooded; about 1.5 miles east of Pleasant Grove, 3,100 feet north and 3,500 feet east of the southwest corner of sec. 16, T. 22 S., R. 13 W.

Ap1—0 to 3 inches; dark grayish brown (10YR 4/2) loam; weak fine granular structure; friable; many fine and medium roots; very strongly acid; clear smooth boundary.

Ap2—3 to 6 inches; yellowish brown (10YR 5/4) loam; weak medium granular structure; friable; many fine and medium roots; very strongly acid; clear smooth boundary.

E—6 to 11 inches; yellowish brown (10YR 5/4) loam; weak coarse subangular blocky structure; friable; many fine and medium roots; very strongly acid; clear smooth boundary.

Bt1—11 to 29 inches; yellowish brown (10YR 5/6) clay

loam; weak medium subangular blocky structure; friable; common fine roots; common medium distinct light brownish gray (10YR 6/2) iron depletions; few fine prominent dark red (2.5YR 4/6) masses of iron accumulation; very strongly acid; gradual wavy boundary.

Bt2—29 to 38 inches; 50 percent yellowish brown (10YR 5/6), 30 percent light brownish gray (10YR 6/2), and 20 percent yellowish red (5YR 5/6) loam; weak medium subangular blocky structure; friable; common fine roots; areas of light brownish gray are iron depletions; areas of yellowish red are masses of iron accumulation; very strongly acid; gradual wavy boundary.

Btg—38 to 44 inches; light brownish gray (10YR 6/2) loam; weak coarse subangular blocky structure; friable; many coarse distinct yellowish brown (10YR 5/6) masses of iron accumulation; very strongly acid; gradual wavy boundary.

C—44 to 65 inches; 40 percent light brownish gray (10YR 6/2), 30 percent yellowish brown (10YR 5/6), and 30 percent strong brown (7.5YR 5/6) sandy loam; massive; friable; few thin strata of gray (10YR 5/1) sand; areas of yellowish brown and strong brown are masses of iron accumulation; areas of light brownish gray are iron depletions; very strongly acid.

The thickness of the solum ranges from 35 to 60 inches. Reaction is very strongly acid or strongly acid throughout the profile, except in areas where lime has been applied.

The A or Ap horizon has hue of 10YR, value of 3 to 5, and chroma of 2 to 4.

The E horizon, if it occurs, has hue of 10YR, value of 5 or 6, and chroma of 2 to 4. The texture is sandy loam, fine sandy loam, or loam.

The upper part of the Bt horizon has hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 4 to 8. It has few or common redoximorphic accumulations in shades of red, yellow, and brown and few or common redoximorphic depletions in shades of gray. The lower part of the horizon has a range in color similar to that of the upper part, or it has no dominant matrix color and is multicolored in shades of brown, gray, and red. The texture of the Bt horizon is loam, clay loam, or sandy clay loam.

The Btg horizon, if it occurs, has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 2. It has few to many redoximorphic accumulations in shades of brown, yellow, or red. The texture is loam or sandy clay loam.

The C horizon commonly has no dominant matrix color and is multicolored in shades of brown and gray. The texture is sandy loam, loamy sand, or sand. In most pedons the horizon has thin strata of finer- or coarser-textured materials.

Faunsdale Series

The Faunsdale series consists of very deep, somewhat poorly drained soils that formed in alkaline, clayey sediments and the underlying soft limestone (chalk). These soils are on concave side slopes and on toeslopes in the Blackland Prairie. Slopes range from 0 to 3 percent. These soils are fine, smectitic, thermic Aquic Hapluderts.

Faunsdale soils are commonly associated on the landscape with Okolona, Sucarnoochee, Sumter, and Vaiden soils. Okolona and Sumter soils are in slightly higher positions than the Faunsdale soils. Okolona soils are moderately well drained. Sumter soils are moderately deep over bedrock. Sucarnoochee soils are on flood plains adjacent to areas of the Faunsdale soils and are subject to frequent flooding. Vaiden soils are in lower positions than the Faunsdale soils and are acid in the upper part of the subsoil.

Typical pedon of Faunsdale silty clay, 0 to 1 percent slopes; about 1 mile north of Dancy, 800 feet north and 1,400 feet east of the southwest corner of sec. 27, T. 24 N., R. 3 W.

Ap1—0 to 4 inches; dark grayish brown (2.5Y 4/2) silty clay; moderate medium granular structure; firm; many fine roots; slightly alkaline; clear wavy boundary.

Ap2—4 to 9 inches; dark grayish brown (2.5Y 4/2) silty clay; moderate fine angular blocky structure; firm; common fine roots; common medium faint light olive brown (2.5Y 5/4) masses of iron accumulation; slightly alkaline; clear wavy boundary.

Bss—9 to 24 inches; olive gray (5Y 4/2) clay; coarse wedge-shaped fragments that part to moderate medium angular blocky structure; firm; common fine roots on faces of slickensides; common large intersecting slickensides that have distinct, polished and grooved surfaces; common fine and few medium nodules and soft black masses of iron and manganese oxides; common medium faint light olive brown (2.5Y 5/4) masses of iron accumulation; slightly effervescent; slightly alkaline; gradual wavy boundary.

Bkss1—24 to 33 inches; olive gray (5Y 5/2) clay; coarse wedge-shaped fragments that part to strong fine and medium angular blocky structure; very firm; few fine roots on faces of slickensides; common large intersecting slickensides that have distinct, polished and grooved surfaces; few fine black nodules and soft black masses of iron and

manganese oxides; common fine nodules of calcium carbonate; common medium distinct light olive brown (2.5Y 5/6) masses of iron accumulation on faces of peds and in peds; common medium faint olive gray (5Y 4/2) iron depletions on faces of peds and in peds; strongly effervescent; moderately alkaline; gradual smooth boundary.

Bkss2—33 to 49 inches; light olive brown (2.5Y 5/4) clay; coarse wedge-shaped fragments that part to strong fine and medium angular blocky structure; very firm; few fine roots on faces of slickensides; common fine and medium nodules and soft masses of calcium carbonate; common fine and medium distinct olive yellow (2.5Y 6/6) masses of iron accumulation on faces of peds and in peds; common fine and medium faint dark grayish brown (2.5Y 4/2) iron depletions on faces of peds and in peds; strongly effervescent; moderately alkaline; clear wavy boundary.

Bkss3—49 to 62 inches; light olive brown (2.5Y 5/4) clay; coarse wedge-shaped fragments that part to strong medium angular blocky structure; very firm; many large intersecting slickensides that have prominent, polished and grooved surfaces; common fine and medium nodules and soft masses of calcium carbonate; many fine distinct olive yellow (2.5Y 6/6) masses of iron accumulation on faces of peds and in peds; many fine and medium faint grayish brown (2.5Y 5/2) iron depletions on faces of peds and in peds; strongly effervescent; moderately alkaline.

The thickness of the solum is more than 40 inches. The depth to bedrock is more than 60 inches.

The A or Ap horizon has hue of 10YR or 2.5Y, value of 3 or 4, and chroma of 1 to 3. Reaction is neutral or slightly alkaline.

The Bss horizon has hue of 10YR, 2.5Y, or 5Y and value and chroma of 4 to 6. It has few to many redoximorphic accumulations in shades of brown and olive and few to many redoximorphic depletions in shades of gray. It has few to many soft masses or nodules or both of iron and manganese oxides. Reaction ranges from neutral to moderately alkaline. The texture is clay loam, silty clay loam, silty clay, or clay.

The Bkss horizon has the same range in color as the Bss horizon. It has few to many soft masses or nodules or both of iron and manganese oxides. It has common or many soft masses or nodules or both of calcium carbonate. Reaction is slightly alkaline or moderately alkaline. The texture is silty clay or clay.

Iuka Series

The Iuka series consists of very deep, moderately well drained soils that formed in stratified loamy and sandy alluvium. These soils are on the flood plains along the Sipsey River and are subject to frequent flooding. Slopes range from 0 to 2 percent. These soils are coarse-loamy, siliceous, active, acid, thermic Aquic Udifluvents.

Iuka soils are commonly associated on the landscape with Bigbee, Kinston, and Ochlockonee soils. Bigbee and Ochlockonee soils are in slightly higher positions than the Iuka soils. Bigbee soils are sandy throughout. Ochlockonee soils are well drained and do not have low-chroma redoximorphic depletions in the upper part of the substratum. The poorly drained Kinston soils are in lower, less convex positions than those of the Iuka soils and are fine-loamy.

Typical pedon of Iuka silt loam, in an area of Ochlockonee-Kinston-Iuka complex, 0 to 2 percent slopes, frequently flooded; about 0.75 mile southeast of Benevola, 2,030 feet north and 2,640 feet east of the southwest corner of sec. 25, T. 22 S., R. 14 W.

A1—0 to 4 inches; dark brown (10YR 4/3) silt loam; weak fine granular structure; very friable; strongly acid; abrupt smooth boundary.

A2—4 to 10 inches; dark brown (10YR 4/3) loam; weak coarse subangular blocky structure; very friable; common medium distinct strong brown (7.5YR 4/6) masses of iron accumulation; common medium distinct grayish brown (10YR 5/2) iron depletions; very strongly acid; clear wavy boundary.

C—10 to 24 inches; pale brown (10YR 6/3) sandy loam; massive; very friable; few fine and medium roots; common medium distinct dark yellowish brown (10YR 4/4) masses of iron accumulation; common medium distinct grayish brown (10YR 5/2) iron depletions; strongly acid; gradual wavy boundary.

Cg1—24 to 41 inches; light brownish gray (10YR 6/2) sandy loam; massive; very friable; few fine roots; few fine flakes of mica; common fine black and brown nodules of iron and manganese oxides; common medium distinct yellowish brown (10YR 5/6) and dark brown (7.5YR 4/4) masses of iron accumulation; very strongly acid; gradual wavy boundary.

Cg2—41 to 60 inches; light brownish gray (10YR 6/2) loamy sand; massive; very friable; common thin strata of sandy loam; common fine flakes of mica; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation; strongly acid.

Reaction is very strongly acid or strongly acid throughout the profile, except for the surface layer in areas where lime has been added.

The A or Ap horizon has hue of 10YR, value of 3 or 4, and chroma of 2 to 4. The texture is silt loam or loam.

The C horizon has hue of 10YR, value of 4 or 5, and chroma of 3 to 6. It has redoximorphic depletions that have chroma of 2 or less within a depth of 20 inches. The texture is sandy loam, fine sandy loam, silt loam, or loam.

The Cg horizon has hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 1 or 2. It has few to many redoximorphic accumulations in shades of brown, red, or yellow. The texture is loamy sand, fine sandy loam, loam, or silt loam.

Kinston Series

The Kinston series consists of very deep, poorly drained soils that formed in stratified loamy and sandy alluvium. These soils are on low parts of flood plains and are subject to frequent flooding for brief periods in winter and spring in most years. Slopes are 0 to 1 percent. These soils are fine-loamy, siliceous, semiactive, acid, thermic Typic Fluvaquents.

Kinston soils are commonly associated on the landscape with Iuka and Mantachie soils and Fluvaquents. The very poorly drained Fluvaquents are in depressions on the flood plains and are ponded for long or very long periods. The moderately well drained Iuka and somewhat poorly drained Mantachie soils are in slightly higher, more convex positions than those of the Kinston soils. Iuka soils are coarse-loamy. Mantachie soils are brownish in the upper part of the subsoil.

Typical pedon of Kinston clay loam, in an area of Kinston-Mantachie complex, 0 to 1 percent slopes, frequently flooded; about 2.5 miles southwest of Gordo, 600 feet west and 175 feet north of the southeast corner of sec. 19, T. 20 S., R. 13 W.

A1—0 to 5 inches; dark brown (10YR 4/3) clay loam; moderate fine granular structure; friable; common fine and medium roots; common fine soft black masses of iron and manganese oxides; common medium distinct yellowish brown (10YR 5/4) masses of iron accumulation; very strongly acid; clear smooth boundary.

A2—5 to 8 inches; dark grayish brown (10YR 4/2) silt loam; weak fine granular structure; very friable; common fine and medium roots; few fine soft black masses of iron and manganese oxides; few medium distinct yellowish brown (10YR 5/6) masses of iron accumulation; common medium faint light brownish gray (10YR 6/2) iron depletions; strongly acid; clear smooth boundary.

Cg1—8 to 25 inches; light brownish gray (10YR 6/2) silt loam; massive; very friable; few fine and medium roots; common medium distinct yellowish brown (10YR 5/6) and strong brown (7.5YR 5/6) masses of iron accumulation; very strongly acid; gradual wavy boundary.

Cg2—25 to 45 inches; gray (10YR 6/1) silty clay loam; massive; firm; few fine roots; common medium prominent strong brown (7.5YR 5/8) and yellowish brown (10YR 5/6) masses of iron accumulation; extremely acid; gradual wavy boundary.

Cg3—45 to 55 inches; gray (2.5Y 6/1) loam; massive; very friable; few fine roots; few fine distinct light olive brown (2.5Y 5/6) and prominent strong brown (7.5YR 5/8) masses of iron accumulation; extremely acid; gradual wavy boundary.

Cg4—55 to 65 inches; grayish brown (10YR 5/2) loamy sand; massive; very friable; few fine roots; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation; very strongly acid.

Reaction ranges from extremely acid to strongly acid throughout the profile.

The A horizon has hue of 10YR, value of 3 to 5, and chroma of 1 to 3. The texture is clay loam or silt loam.

The Cg horizon has hue of 10YR to 5Y, value of 4 to 6, and chroma of 1 or 2. It has few or common redoximorphic accumulations in shades of brown, red, and yellow. The number of soft black masses of iron and manganese oxides ranges from none to common. The upper part of the horizon is sandy loam, loam, silt loam, clay loam, or sandy clay loam. The lower part is loamy sand, sandy loam, loam, sandy clay loam, clay loam, or silty clay loam. In some pedons the horizon has gravelly strata below a depth of 40 inches.

Lucedale Series

The Lucedale series consists of very deep, well drained soils that formed in loamy sediments. These soils are on broad summits of high stream terraces. Slopes range from 0 to 2 percent. These soils are fine-loamy, siliceous, subactive, thermic Rhodic Paleudults.

The Lucedale soils are commonly associated on the landscape with Bama, Savannah, and Smithdale soils. Bama soils are in positions similar to those of the Lucedale soils. They do not have chroma 3 colors throughout the argillic horizon. Savannah soils are in lower positions than the Lucedale soils and have hue of 7.5YR or yellower in the upper part of the argillic

horizon. Smithdale soils are on side slopes adjacent to areas of the Lucedale soils and do not have chroma 3 colors throughout the argillic horizon.

Typical pedon of Lucedale loam, 0 to 2 percent slopes; about 2.3 miles northwest of Aliceville, 3,045 feet north and 625 feet east of the southwest corner of sec. 11, T. 22 S., R. 16 W.

Ap—0 to 7 inches; dark reddish brown (5YR 3/3) loam; weak fine granular structure; very friable; many fine and medium roots; strongly acid; clear smooth boundary.

Bt1—7 to 16 inches; dark red (2.5YR 3/6) loam; weak medium subangular blocky structure; friable; many fine and medium roots; few faint clay films on faces of peds; strongly acid; gradual smooth boundary.

Bt2—16 to 39 inches; dark red (2.5YR 3/6) clay loam; moderate medium subangular blocky structure; friable; many fine and medium roots; common faint clay films on faces of peds; very strongly acid; gradual smooth boundary.

Bt3—39 to 72 inches; dark red (2.5YR 3/6) sandy clay loam; weak coarse subangular blocky structure; friable; few fine roots; common faint clay films on faces of peds; very strongly acid.

The solum is more than 60 inches thick. Reaction ranges from very strongly acid to moderately acid throughout the profile, except for the surface layer in areas where lime has been added.

The A or Ap horizon has hue of 5YR or 7.5YR, value of 3, and chroma of 2 to 4.

The Bt horizon has hue of 10R or 2.5YR, value of 3, and chroma of 4 to 6. The texture is sandy clay loam, clay loam, or loam.

Luverne Series

The Luverne series consists of very deep, well drained soils that formed in stratified clayey and loamy sediments. These soils are on ridgetops and side slopes in the uplands. Slopes range from 5 to 35 percent. These soils are fine, mixed, semiactive, thermic Typic Hapludults.

Luverne soils are commonly associated on the landscape with Sacul, Savannah, and Smithdale soils. Sacul and Smithdale soils are in positions similar to those of the Luverne soils. Sacul soils have low-chroma redoximorphic depletions in the upper part of the argillic horizon. Smithdale soils are fine-loamy. Savannah soils are in higher positions than the Luverne soils and are fine-loamy.

Typical pedon of Luverne sandy loam, in an area of Smithdale-Luverne-Sacul complex, 15 to 35 percent slopes; about 2.3 miles east of Carrollton, 2,435 feet west and 1,845 feet south of the northeast corner of sec. 2, T. 21 S., R. 15 W.

Ap—0 to 5 inches; brown (7.5YR 4/4) sandy loam; weak medium granular structure; very friable; many fine roots; very strongly acid; abrupt wavy boundary.

Bt1—5 to 19 inches; yellowish red (5YR 4/6) clay; strong medium subangular blocky structure; firm; common fine roots; few faint clay films on faces of peds; few fine flakes of mica; strongly acid; clear wavy boundary.

Bt2—19 to 27 inches; dark red (2.5YR 4/8) clay loam; strong medium subangular blocky structure; firm; few fine and medium roots; common faint clay films on faces of peds; common medium prominent yellowish brown (10YR 5/6) masses of iron accumulation; strongly acid; gradual wavy boundary.

Bt3—27 to 41 inches; dark red (2.5YR 4/6) clay loam; weak coarse subangular blocky structure; friable; few faint clay on faces of peds; many fine flakes of mica; common medium prominent yellowish brown (10YR 5/6) masses of iron accumulation; very strongly acid; clear wavy boundary.

C—41 to 65 inches; thinly stratified red (2.5YR 5/8) sandy loam, strong brown (7.5YR 5/6) loamy sand, and light brownish gray (10YR 6/2) sandy clay loam; massive; friable; many fine flakes of mica; areas of light brownish gray are iron depletions; very strongly acid.

The thickness of the solum ranges from 20 to 50 inches. Reaction ranges from extremely acid to strongly acid throughout the profile, except for the surface layer in areas where lime has been added.

The A or Ap horizon has hue of 7.5YR or 10YR, value of 3 or 4, and chroma of 2 to 4.

The E horizon, if it occurs, has hue of 10YR, value of 5 or 6, and chroma of 2 to 4. The texture is loamy sand, sandy loam, or fine sandy loam.

The Bt horizon has hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 4 to 8. The number of redoximorphic features in shades of brown, red, yellow, and gray ranges from none to common. These features are assumed to be relict. The texture is clay loam, sandy clay, or clay.

The BC horizon, if it occurs, has colors similar to those of the Bt horizon. It has coarse or very coarse structure and weakly expressed bedding planes. The texture is clay loam or sandy clay loam.

The C horizon consists of stratified, loamy to clayey sediments that have a high content of mica. The texture of individual strata ranges from loamy sand to

clay, and the thickness of individual strata ranges from a few millimeters to several centimeters. In some pedons the horizon has few or common thin strata of clayey shale or ironstone. The colors are variable, but the sandy and loamy strata commonly have hue of 2.5YR to 10YR, value of 4 to 6, and chroma of 4 to 8. The clayey strata generally are grayish.

Mantachie Series

The Mantachie series consists of very deep, somewhat poorly drained soils that formed in loamy alluvium. These soils are on flood plains along streams throughout the county and are subject to flooding for brief periods one or more times in most years. Slopes are 0 to 1 percent. These soils are fine-loamy, siliceous, active, acid, thermic Aeric Endoaquepts.

Mantachie soils are commonly associated on the landscape with Kinston and Ochlockonee soils and Fluvaquents. The poorly drained Kinston soils are in slightly lower, less convex positions on the flood plains than the Mantachie soils and are grayish throughout the subsoil. The well drained Ochlockonee soils are in slightly higher, more convex positions than those of the Mantachie soils and are coarse-loamy. The very poorly drained Fluvaquents are in depressions and are ponded for long or very long periods.

Typical pedon of Mantachie loam, in an area of Kinston-Mantachie complex, 0 to 1 percent slopes, frequently flooded; about 4 miles north of Carrollton, 2,030 feet north and 800 feet west of the southeast corner of sec. 32, T. 19 S., R. 15 W.

Ap—0 to 6 inches; dark brown (10YR 4/3) loam; weak medium granular structure; friable; common fine roots; many faint dark yellowish brown (10YR 4/4) masses of iron accumulation; strongly acid; clear smooth boundary.

A—6 to 12 inches; brown (10YR 5/3) loam; weak medium subangular blocky structure; friable; common fine roots; common medium distinct light brownish gray (10YR 6/2) and grayish brown (10YR 5/2) iron depletions on faces of peds and in peds; very strongly acid; clear wavy boundary.

Bw—12 to 24 inches; 50 percent yellowish brown (10YR 5/4) and 50 percent light brownish gray (10YR 6/2) sandy clay loam; weak medium subangular blocky structure; friable; few fine roots; areas of light brownish gray are iron depletions; very strongly acid; gradual wavy boundary.

Bg1—24 to 41 inches; light brownish gray (10YR 6/2) sandy clay loam; weak medium subangular blocky structure; friable; few fine roots; common medium distinct yellowish brown (10YR 5/6) and strong brown (7.5YR 5/6) masses of iron accumulation; very strongly acid; gradual wavy boundary.

Bg2—41 to 52 inches; gray (10YR 6/1) sandy clay loam; weak coarse subangular blocky structure; friable; few medium black stains of iron and manganese oxides on faces of peds; common medium prominent strong brown (7.5YR 5/6) and yellowish brown (10YR 5/6) masses of iron accumulation; very strongly acid; gradual wavy boundary.

Bg3—52 to 62 inches; light brownish gray (10YR 6/2) sandy clay loam; weak coarse subangular blocky structure; friable; many fine black nodules of iron and manganese oxides; common medium prominent yellowish brown (10YR 5/6) and strong brown (7.5YR 5/6) masses of iron accumulation; very strongly acid.

The thickness of the solum ranges from 30 to 65 inches. Reaction is very strongly acid or strongly acid throughout the profile, except for the surface layer in areas where lime has been added.

The A or Ap horizon has hue of 10YR, value of 3 to 5, and chroma of 2 to 4.

The Bw horizon has hue of 10YR or 2.5Y, value of 4 or 5, chroma of 3 to 6, and common or many redoximorphic depletions in shades of gray; or it has no dominant matrix color and is multicolored in shades of gray, brown, red, and yellow. The texture is loam, clay loam, or sandy clay loam.

The Bg horizon has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 1 or 2. It has common or many redoximorphic accumulations in shades of brown, yellow, or red. The texture is clay loam, loam, sandy loam, or sandy clay loam.

Mooreville Series

The Mooreville series consists of very deep, moderately well drained soils that formed in loamy alluvium. These soils are on the flood plains along the Tombigbee River and are subject to frequent flooding for brief periods during winter and spring in most years. Slopes range from 0 to 2 percent. These soils are fine-loamy, siliceous, active, thermic Fluvaquentic Dystrochrepts.

Mooreville soils are commonly associated on the landscape with Bigbee, Riverview, Una, and Urbo soils. Bigbee and Riverview soils are in slightly higher, more convex positions on the flood plains than the Mooreville soils. Bigbee soils are sandy throughout. Riverview soils do not have low-chroma redoximorphic depletions in the upper part of the subsoil. Una and Urbo soils are in slightly lower, more concave positions

on the flood plains than the Mooreville soils. They are clayey and have grayish colors throughout the subsoil.

Typical pedon of Mooreville loam, in an area of Urbo-Mooreville-Una complex, gently undulating, frequently flooded; about 1.8 miles west of Aliceville, 1,220 feet north and 3,500 feet east of the southwest corner of sec. 21, T. 22 S., R. 16 W.

A—0 to 6 inches; dark brown (10YR 3/3) loam; weak fine granular structure; friable; many fine and medium roots; strongly acid; clear smooth boundary.

Bw1—6 to 25 inches; yellowish brown (10YR 5/4) sandy clay loam; weak medium subangular blocky structure; friable; few fine and medium roots; common medium distinct grayish brown (10YR 5/2) iron depletions; very strongly acid; gradual wavy boundary.

Bw2—25 to 37 inches; yellowish brown (10YR 5/6) sandy clay loam; weak coarse subangular blocky structure; friable; few fine and medium roots; common fine prominent dark red (2.5YR 4/6) masses of iron accumulation; common medium distinct light brownish gray (10YR 6/2) iron depletions; very strongly acid; clear wavy boundary.

Bw3—37 to 51 inches; 35 percent yellowish brown (10YR 5/6), 30 percent light brownish gray (10YR 6/2), 25 percent strong brown (7.5YR 5/6), and 10 percent red (2.5YR 5/6) clay loam; weak coarse subangular blocky structure; firm; few fine roots; very strongly acid; clear wavy boundary.

Cg—51 to 65 inches; light brownish gray (10YR 6/2) sandy loam; massive; friable; common medium prominent strong brown (7.5YR 5/6) and few fine prominent yellowish red (5YR 5/6) masses of iron accumulation; very strongly acid.

The thickness of the solum ranges from 40 to 60 inches. Reaction is very strongly acid or strongly acid throughout the profile, except for the surface layer in areas where lime has been added.

The A or Ap horizon has hue of 10YR, value of 3 or 4, and chroma of 2 or 3.

The upper part of the Bw horizon has hue of 10YR, value of 4 or 5, and chroma of 4 to 8. The number of redoximorphic depletions in shades of gray and redoximorphic accumulations in shades of yellow, brown, or red ranges from none to common in the upper part of the horizon. The lower part commonly has no dominant matrix color and is multicolored in shades of brown, gray, yellow, and red; or it has hue of 10YR, value of 4 or 5, chroma of 4 to 8, and common or many redoximorphic depletions in shades of gray. The texture of the Bw horizon is loam, clay loam, or sandy clay loam.

The Cg horizon commonly has a grayish matrix and few to many redoximorphic accumulations in shades of brown, yellow, or red; or it has no dominant matrix color and is multicolored in shades of gray, brown, and yellow. The texture is dominantly sandy loam, loam, sandy clay loam, or clay loam. In most pedons the horizon has thin strata of finer- or coarser-textured materials.

Myatt Series

The Myatt series consists of very deep, poorly drained soils that formed in stratified loamy alluvium. These soils are on low stream terraces and are subject to occasional flooding. Slopes are 0 to 1 percent. These soils are fine-loamy, siliceous, active, thermic Typic Endoaquults.

Myatt soils are commonly associated on the landscape with Annemaine, Cahaba, Columbus, and Savannah soils. These associated soils are in slightly higher, more convex positions on the stream terraces than the Myatt soils. Annemaine soils have a clayey argillic horizon. The well drained Cahaba soils have a reddish argillic horizon. The moderately well drained Columbus and Savannah soils have a brownish argillic horizon.

Typical pedon of Myatt fine sandy loam, in an area of Myatt-Columbus complex, 0 to 2 percent slopes, occasionally flooded; about 1.7 miles northeast of Jena, 2,640 feet north and 1,220 feet west of the southeast corner of sec. 11, T. 22 S., R. 13 W.

A—0 to 4 inches; dark grayish brown (10YR 4/2) fine sandy loam; weak fine granular structure; very friable; many fine and medium roots; few fine wormcasts; common medium distinct dark yellowish brown (10YR 4/4) masses of iron accumulation; moderately acid; clear smooth boundary.

Eg—4 to 9 inches; light brownish gray (2.5Y 6/2) fine sandy loam; weak coarse subangular blocky structure; very friable; common fine and medium roots; few fine black nodules of iron and manganese oxides; common medium distinct yellowish brown (10YR 5/6) and dark yellowish brown (10YR 4/4) masses of iron accumulation; strongly acid; clear smooth boundary.

Btg1—9 to 29 inches; light brownish gray (10YR 6/2) sandy clay loam; moderate medium subangular blocky structure; firm; common fine and medium roots; few faint clay films on faces of peds; common medium prominent yellowish brown (10YR 5/8) and strong brown (7.5YR 5/6) masses of iron accumulation; strongly acid; gradual wavy boundary.

Btg2—29 to 37 inches; gray (10YR 6/1) sandy clay loam; moderate medium subangular blocky structure; firm; few fine and medium roots; common faint clay films on faces of peds; common medium prominent strong brown (7.5YR 5/6) and yellowish red (5YR 5/6) masses of iron accumulation; very strongly acid; gradual wavy boundary.

Btg3—37 to 50 inches; gray (10YR 6/1) sandy clay loam; weak coarse subangular blocky structure; firm; few fine and medium roots; common faint clay films on faces of peds; many medium prominent strong brown (7.5YR 5/6) and yellowish red (5YR 5/6) masses of iron accumulation; very strongly acid; clear wavy boundary.

Cg—50 to 70 inches; gray (10YR 6/1) sandy loam; massive; very friable; few fine roots; common medium prominent strong brown (7.5YR 5/6) masses of iron accumulation; very strongly acid.

The thickness of the solum ranges from 40 to 60 inches. Reaction ranges from extremely acid to strongly acid throughout the profile, except for the surface layer in areas where lime has been added.

The A or Ap horizon has hue of 10YR, value of 3 or 4, and chroma of 1 or 2.

The Eg horizon, if it occurs, has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 1 or 2. The texture is fine sandy loam or sandy loam.

The Btg horizon has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 1 or 2. It has few to many redoximorphic accumulations in shades of brown, red, or yellow. The texture is sandy clay loam, clay loam, or loam.

The Cg horizon has hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 1 or 2; or it has no dominant matrix color and is multicolored in shades of gray, yellow, red, and brown. The texture is sandy loam, fine sandy loam, sandy clay loam, or clay loam. In some pedons the horizon has thin strata of finer- and coarser-textured materials.

Ochlockonee Series

The Ochlockonee series consists of very deep, well drained soils that formed in stratified loamy and sandy alluvium. These soils are on high parts of the natural levee on the flood plains along the Sipsey River. They are subject to frequent flooding for brief periods in winter and spring in most years. Slopes range from 0 to 2 percent. These soils are coarse-loamy, siliceous, active, acid, thermic Typic Udifluvents.

Ochlockonee soils are commonly associated on the landscape with Bigbee, Iuka, and Kinston soils. Bigbee soils are in slightly higher positions on the natural levees than the Ochlockonee soils and are sandy throughout. The moderately well drained Iuka soils are in slightly lower, less convex positions than those of the Ochlockonee soils. The poorly drained Kinston soils are in lower, more concave positions on the flood plains than the Ochlockonee soils and are fine-loamy.

Typical pedon of Ochlockonee sandy loam, in an area of Ochlockonee-Kinston-Iuka complex, 0 to 2 percent slopes, frequently flooded; about 0.75 mile southeast of Benevola, 2,230 feet north and 2,845 feet east of the southwest corner of sec. 25, T. 22 S., R. 14 W.

A1—0 to 4 inches; dark brown (10YR 4/3) sandy loam; weak fine granular structure; very friable; common fine and medium roots; moderately acid; clear smooth boundary.

A2—4 to 11 inches; brown (10YR 5/3) loam; weak coarse subangular blocky structure; very friable; few fine and medium roots; strongly acid; clear wavy boundary.

C1—11 to 32 inches; yellowish brown (10YR 5/6) sandy loam; massive, weak thin bedding planes; very friable; few fine and medium roots; strongly acid; gradual wavy boundary.

C2—32 to 65 inches; yellowish brown (10YR 5/6) loamy sand; massive; very friable; common thin strata of pale brown (10YR 6/3) sand; common fine flakes of mica; common medium distinct dark yellowish brown (10YR 4/4) masses of iron accumulation; very strongly acid.

Reaction is very strongly acid or strongly acid throughout the profile, except for the surface layer in areas where lime has been added.

The A or Ap horizon has hue of 7.5YR or 10YR, value of 3 or 4, and chroma of 2 to 4.

The C horizon has hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 3 to 6. The texture is dominantly sandy loam, fine sandy loam, silt loam, loam, loamy sand, or loamy fine sand. In most pedons the horizon has thin strata of finer- and coarser-textured materials.

Okolona Series

The Okolona series consists of very deep, moderately well drained soils that formed in alkaline, clayey residuum derived from soft limestone (chalk). These soils are on broad ridgetops in the uplands of the Blackland Prairie. Slopes range from 0 to 3 percent. These soils are fine, smectitic, thermic Oxyaquic Hapluderts.

Okolona soils are commonly associated on the landscape with Faunsdale, Sucarnoochee, Sumter, and Vaiden soils. The somewhat poorly drained Faunsdale

soils are in slightly lower positions than the Okolona soils. The somewhat poorly drained Sucarnoochee soils are on flood plains adjacent to areas of the Okolona soils and are subject to frequent flooding. Sumter soils are in higher positions or on lower side slopes than the Okolona soils and are moderately deep over bedrock. Vaiden soils are in slightly lower positions than the Okolona soils and are acid in the upper part of the subsoil.

Typical pedon of Okolona silty clay, 0 to 1 percent slopes; about 0.5 mile east of Dancy, 2,000 feet north and 2,500 feet east of the southwest corner of sec. 34, T. 24 N., R. 3 W.

Ap—0 to 4 inches; very dark grayish brown (2.5Y 3/2) silty clay; moderate medium granular structure; firm; many fine roots; slightly acid; abrupt smooth boundary.

A—4 to 16 inches; black (5Y 2.5/2) clay; strong medium angular blocky structure; firm; common fine roots; few fine black nodules of iron and manganese oxides; few fine nodules of calcium carbonate; common medium faint light olive brown (2.5Y 5/4) masses of iron accumulation on faces of peds; slightly alkaline; abrupt wavy boundary.

Bkss1—16 to 22 inches; olive gray (5Y 4/2) clay; weak coarse angular blocky structure parting to strong fine angular blocky; very firm; common fine roots; common large intersecting slickensides that have faint, slightly grooved surfaces; few fine black nodules of iron and manganese oxides; few fine nodules of calcium carbonate; common medium faint light olive brown (2.5Y 5/4) masses of iron accumulation on faces of peds; slightly effervescent; moderately alkaline; gradual wavy boundary.

Bkss2—22 to 38 inches; olive gray (5Y 4/2) clay; coarse wedge-shaped fragments that part to strong fine and medium angular blocky structure; very firm; few fine roots; common large intersecting slickensides that have prominent, polished and grooved surfaces; common fine black nodules of iron and manganese oxides; few fine nodules of calcium carbonate; common fine faint light olive brown (2.5Y 5/4) masses of iron accumulation; few fine faint light gray iron depletions on faces of peds; moderately alkaline; clear wavy boundary.

Bkss3—38 to 50 inches; 60 percent olive (5Y 5/4) and 40 percent olive gray (5Y 4/2) clay; very coarse wedge-shaped fragments that part to strong fine and medium angular blocky structure; very firm; few fine roots; common large intersecting slickensides that have prominent, polished and grooved surfaces; few fine black nodules of iron and manganese oxides; few fine nodules and common fine soft masses of calcium carbonate; common fine faint light gray (5Y 7/1) iron depletions on faces of peds; strongly effervescent; slightly alkaline; clear wavy boundary.

Bkss4—50 to 65 inches; 35 percent olive brown (2.5Y 4/4), 35 percent olive gray (5Y 4/2), and 30 percent dark yellowish brown (10YR 4/4) clay; very coarse wedge-shaped fragments that part to strong coarse and medium angular blocky structure; common large intersecting slickensides that have prominent, polished and grooved surfaces; few fine black nodules of iron and manganese oxides; common fine nodules and soft masses of calcium carbonate; few fine faint light gray iron depletions on faces of peds; strongly effervescent; moderately alkaline.

The thickness of the solum ranges from 40 to more than 60 inches. Reaction ranges from slightly acid to moderately alkaline in the Ap and A horizons and is slightly alkaline or moderately alkaline in the B horizon. The number of nodules of iron and manganese oxide is few or common throughout the profile.

The A and Ap horizons have hue of 2.5Y or 5Y and value and chroma of 2 or 3. The number of soft masses and nodules of calcium carbonate ranges from none to common.

The Bkss horizon has hue of 2.5Y or 5Y, value of 4 or 5, and chroma of 2 to 4; or it has no dominant matrix color and is multicolored in shades of olive, brown, and gray. It has few or common redoximorphic depletions in shades of gray and few or common redoximorphic accumulations in shades of yellow, brown, and olive. It has few to many soft masses and nodules of calcium carbonate. The texture is silty clay or clay.

Riverview Series

The Riverview series consists of very deep, well drained soils that formed in loamy alluvium. These soils are on high parts of the natural levee on the flood plains along the Tombigbee River and are subject to frequent flooding for brief periods in winter and spring in most years. Slopes range from 0 to 2 percent. These soils are fine-loamy, mixed, active, thermic Fluventic Dystrochrepts.

Riverview soils are commonly associated on the landscape with Bigbee, Mooreville, Una, and Urbo soils. Bigbee and Mooreville soils are in positions similar to those of the Riverview soils. Bigbee soils are sandy throughout. Mooreville soils are moderately well drained. Una and Urbo soils are in lower, less convex positions than those of the Riverview soils and are clayey throughout.

Typical pedon of Riverview loam, 0 to 2 percent

slopes, frequently flooded; about 0.5 mile southwest of Vienna, 1,825 feet south and 1,015 feet east of the northwest corner of sec. 4, T. 23 N., R. 2 W.

A—0 to 6 inches; very dark grayish brown (10YR 3/2) loam; weak fine granular structure; very friable; many fine and medium roots; moderately acid; abrupt wavy boundary.

Bw1—6 to 16 inches; dark brown (10YR 4/3) loam; weak medium subangular blocky structure; friable; many fine and medium roots and common coarse roots; very strongly acid; clear wavy boundary.

Bw2—16 to 23 inches; dark yellowish brown (10YR 4/4) loam; weak medium subangular blocky structure; friable; common fine, medium, and coarse roots; common fine flakes of mica; very strongly acid; clear wavy boundary.

Bw3—23 to 42 inches; strong brown (7.5YR 4/6) sandy clay loam; weak medium subangular blocky structure; friable; few fine roots; common fine flakes of mica; common medium distinct yellowish brown (10YR 5/4) and dark yellowish brown (10YR 4/4) masses of iron accumulation; very strongly acid; clear wavy boundary.

Bw4—42 to 51 inches; yellowish brown (10YR 5/4) sandy clay loam; weak very coarse subangular blocky structure; friable; few fine roots; common thin strata of yellowish brown (10YR 5/8) sandy loam; common fine flakes of mica; common medium distinct strong brown (7.5YR 5/6) masses of iron accumulation; common medium faint pale brown (10YR 6/3) iron depletions; very strongly acid; clear wavy boundary.

C—51 to 65 inches; yellowish brown (10YR 5/6) sandy loam; massive; very friable; few thin strata of pale brown (10YR 6/3) fine sand; common fine flakes of mica; common fine distinct strong brown (7.5YR 5/6) masses of iron accumulation; common fine and medium distinct light brownish gray (10YR 6/2) iron depletions; very strongly acid.

The thickness of the solum ranges from 24 to 60 inches. Reaction ranges from very strongly acid to moderately acid throughout the profile, except for the surface layer in areas where lime has been added.

The A or Ap horizon has hue of 7.5YR or 10YR, value of 3 or 4, and chroma of 2 to 4.

The Bw horizon has hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 4 to 8. The number of redoximorphic accumulations in shades of brown, yellow, and red ranges from none to common. At depths of 24 inches or more, the number of redoximorphic depletions having chroma of 2 or less ranges from none to common. The texture is clay loam, sandy clay loam, loam, fine sandy loam, silt loam, or silty clay loam.

The C horizon has hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 4 to 8. It has few or common redoximorphic accumulations in shades of brown, red, and yellow and few or common redoximorphic depletions in shades of gray. The texture is dominantly loam, fine sandy loam, sandy loam, loamy fine sand, loamy sand, or sand. In most pedons the horizon has strata of finer- or coarser-textured materials.

Sacul Series

The Sacul series consists of very deep, moderately well drained soils that formed in stratified loamy and clayey sediments. These soils are on ridgetops and side slopes in the uplands. Slopes range from 2 to 35 percent. These soils are fine, mixed, active, thermic Aquic Hapludults.

Sacul soils are commonly associated on the landscape with Luverne and Smithdale soils. These associated soils are in positions similar to those of the Sacul soils. Luverne soils do not have low-chroma redoximorphic depletions that are caused by current wetness in the upper part of the subsoil. Smithdale soils are fine-loamy.

Typical pedon of Sacul sandy loam, in an area of Smithdale-Luverne-Sacul complex, 15 to 35 percent slopes; about 2.5 miles east of Kirk, 600 feet south and 2,840 feet east of the northwest corner of sec. 13, T. 21 S., R. 13 W.

A—0 to 5 inches; dark grayish brown (10YR 4/2) sandy loam; weak fine granular structure; very friable; common fine and coarse roots; few gravel-sized fragments of ironstone; moderately acid; clear smooth boundary.

E—5 to 12 inches; brown (10YR 5/3) sandy loam; weak coarse subangular blocky structure; very friable; common fine, medium, and coarse roots; strongly acid; clear smooth boundary.

Bt1—12 to 21 inches; red (2.5YR 5/8) clay; strong fine and medium angular blocky structure; common fine, medium, and coarse roots; few faint clay films on faces of peds; few fine distinct grayish brown (10YR 5/2) iron depletions; strongly acid; clear wavy boundary.

Bt2—21 to 33 inches; red (2.5YR 5/8) clay; strong medium angular blocky structure; common fine and medium roots; few faint clay films on faces of peds; many medium distinct grayish brown (10YR 5/2) iron depletions; very strongly acid; clear wavy boundary.

Bt3—33 to 48 inches; red (2.5YR 5/8) clay loam;

moderate medium angular blocky structure; firm; few fine roots; common faint clay films on faces of peds; many medium distinct light brownish gray (10YR 6/2) iron depletions; very strongly acid; clear smooth boundary.

Btg—48 to 60 inches; gray (10YR 6/1) clay loam; moderate coarse angular blocky structure; firm; common faint clay films on faces of peds; common medium prominent dark yellowish brown (10YR 4/6) and dark red (2.5YR 4/8) masses of iron accumulation; very strongly acid.

The thickness of the solum ranges from 40 to more than 80 inches. Reaction ranges from very strongly acid to moderately acid in the A and E horizons and from extremely acid to strongly acid in the Bt and Btg horizons and in the C horizon, if it occurs.

The A horizon has hue of 10YR, value of 3 or 4, and chroma of 2 to 4. The Ap horizon, if it occurs, has hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 3 or 4.

The E horizon, if it occurs, has hue of 10YR, value of 5 or 6, and chroma of 3 or 4. The texture is sandy loam, fine sandy loam, or loamy sand.

The Bt horizon has hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 6 to 8. It has few to many redoximorphic accumulations in shades of red, yellow, and brown and few to many redoximorphic depletions in shades of gray. The texture is clay loam, clay, silty clay, or sandy clay.

The Btg horizon has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 1 or 2. It has few to many redoximorphic accumulations in shades of red, yellow, and brown. The texture is clay loam, sandy clay loam, or sandy clay.

The C horizon, if it occurs, is multicolored in shades of gray, red, or brown and commonly is stratified. The texture is clay loam, sandy clay loam, or sandy loam. In some pedons the horizon has thin strata of soft, clayey shale.

Savannah Series

The Savannah series consists of very deep, moderately well drained soils that formed in loamy sediments. These soils are on broad summits of high stream terraces and on narrow ridgetops in the uplands. Slopes range from 0 to 5 percent. These soils are fine-loamy, siliceous, semiactive, thermic Typic Fragiudults.

Savannah soils are commonly associated on the landscape with Bama, Lucedale, Luverne, Myatt, and Smithdale soils. Bama and Lucedale soils are in landscape positions similar to those of Savannah soils but are at higher elevations. They have a reddish argillic horizon and do not have a fragipan. Luverne and Smithdale soils are on side slopes adjacent to areas of the Savannah soils. Luverne soils have a clayey argillic horizon. Smithdale soils have a reddish argillic horizon and do not have a fragipan. The poorly drained Myatt soils are in slightly lower, more concave positions than those of the Savannah soils and have a grayish subsoil.

Typical pedon of Savannah loam, 0 to 2 percent slopes; about 4 miles northeast of Carrollton, 1,500 feet south and 1,000 feet east of the northwest corner of sec. 18, T. 20 S., R. 14 W.

Ap—0 to 7 inches; dark grayish brown (10YR 4/2) loam; weak fine granular structure; very friable; many fine and medium roots; moderately acid; clear smooth boundary.

E—7 to 12 inches; brown (10YR 5/3) loam; weak coarse subangular blocky structure; very friable; many fine and medium roots; moderately acid; clear smooth boundary.

Bt1—12 to 19 inches; yellowish brown (10YR 5/6) loam; moderate medium subangular blocky structure; friable; common fine and medium roots; few faint clay films on faces of peds; very strongly acid; clear smooth boundary.

Bt2—19 to 26 inches; yellowish brown (10YR 5/4) loam; moderate medium subangular blocky structure; friable; common fine roots; few faint clay films on faces of peds; few fine brown and black nodules of iron and manganese oxides; few fine faint pale brown iron depletions; very strongly acid; clear wavy boundary.

Btx1—26 to 37 inches; yellowish brown (10YR 5/6) loam; moderate very coarse prismatic structure; firm, brittle in about 65 percent of the mass; few fine roots in seams between prisms; few faint clay films on faces of peds; thin seams of light brownish gray (10YR 6/2) loam between prisms; common fine distinct dark yellowish brown (10YR 4/4) masses of iron accumulation; light brownish gray areas are iron depletions; very strongly acid; clear wavy boundary.

Btx2—37 to 49 inches; yellowish brown (10YR 5/6) clay loam; moderate very coarse prismatic structure; firm, brittle in about 70 percent of the mass; few fine roots in seams between prisms; few faint clay films on faces of peds; thin seams of light brownish gray (10YR 6/2) loam between prisms; common fine prominent red (2.5YR 4/6) masses of iron accumulation; light brownish gray areas are iron depletions; very strongly acid; gradual wavy boundary.

Btx3—49 to 65 inches; yellowish brown (10YR 5/6) clay loam; weak very coarse prismatic structure;

firm, brittle in about 60 percent of the mass; few faint clay films on faces of peds; common medium prominent yellowish red (5YR 5/8) masses of iron accumulation; many fine and medium distinct gray (10YR 6/1) iron depletions in peds and in seams between peds; very strongly acid.

The thickness of the solum ranges from 50 to more than 80 inches. The depth to the fragipan ranges from 20 to 30 inches. Reaction is very strongly acid or strongly acid throughout the profile, except for the surface and subsurface layers in areas where lime has been applied.

The Ap or A horizon has hue of 10YR, value of 3 or 4, and chroma of 2 to 4.

The E horizon, if it occurs, has hue of 10YR, value of 5 or 6, and chroma of 3 or 4. The texture is silt loam, loam, or fine sandy loam.

The Bt horizon has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 4 to 8. The number of redoximorphic accumulations in shades of brown, yellow, and red ranges from none to common. The texture is sandy clay loam, clay loam, or loam.

The Btx horizon has hue of 10YR, value of 5 or 6, and chroma of 4 to 8. It has few to many redoximorphic accumulations in shades of brown, yellow, and red and few to many redoximorphic depletions in shades of gray. The texture is sandy clay loam, clay loam, or loam.

Smithdale Series

The Smithdale series consists of very deep, well drained soils that formed in loamy sediments. These soils are on narrow ridgetops and on side slopes in the uplands. Slopes range from 2 to 35 percent. These soils are fine-loamy, siliceous, subactive, thermic Typic Hapludults.

Smithdale soils are commonly associated on the landscape with Bama, Lucedale, Luverne, Sacul, and Savannah soils. Bama and Lucedale soils are in higher positions than the Smithdale soils. Bama soils have an argillic horizon that does not have a significant decrease in clay content within a depth of 60 inches. Lucedale soils have a dark red argillic horizon. Luverne and Sacul soils are in positions similar to those of the Smithdale soils. They have a clayey argillic horizon. Savannah soils are in higher positions than the Smithdale soils and have a fragipan.

Typical pedon of Smithdale sandy loam, 5 to 8 percent slopes; about 2 miles southwest of Newtonville, 2,000 feet south and 1,800 feet west of the northeast corner of sec. 11, T. 18 S., R. 13 W.

Ap—0 to 7 inches; yellowish brown (10YR 5/4) sandy loam; weak fine granular structure; very friable; few fine roots; very strongly acid; clear smooth boundary.

Bt1—7 to 17 inches; yellowish red (5YR 4/6) clay loam; weak medium subangular blocky structure; friable; few fine and medium roots; few faint clay films on faces of peds; very strongly acid; clear wavy boundary.

Bt2—17 to 29 inches; yellowish red (5YR 4/6) loam; weak medium subangular blocky structure; friable; few fine roots; few faint clay films on faces of peds; very strongly acid; clear wavy boundary.

Bt3—29 to 38 inches; red (2.5YR 5/6) loam; weak medium subangular blocky structure; friable; few fine roots; few faint clay films on faces of peds; very strongly acid; gradual wavy boundary.

Bt4—38 to 57 inches; red (2.5YR 5/6) sandy clay loam; weak coarse subangular blocky structure; friable; few fine roots; few faint clay films on faces of peds; few thin streaks of uncoated sand; very strongly acid; gradual wavy boundary.

Bt5—57 to 65 inches; red (2.5YR 5/8) sandy loam; weak coarse subangular blocky structure; very friable; few faint clay films on faces of peds; few thin streaks of uncoated sand; very strongly acid.

The thickness of the solum ranges from 60 inches to more than 100 inches. Reaction is very strongly acid or strongly acid throughout the profile, except for the surface layer in areas where lime has been added.

The Ap or A horizon has hue of 7.5YR or 10YR, value of 3 or 4, and chroma of 2 to 4.

The E horizon, if it occurs, has hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 4 to 8. The texture is loamy sand or sandy loam.

The upper part of the Bt horizon has hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 6 to 8. The texture is clay loam, sandy clay loam, or loam.

The lower part of the Bt horizon has colors similar to those of the upper part. It commonly has streaks or pockets of uncoated sand. The texture is sandy loam, loam, or sandy clay loam.

The C horizon, if it occurs, has hue of 2.5YR to 7.5YR, value of 4 or 5, and chroma of 6 to 8. It is massive and commonly has thin bedding planes. The texture is sandy loam or loamy sand. In most pedons the horizon has thin strata of finer- and coarser-textured materials.

Sucarnoochee Series

The Sucarnoochee series consists of very deep, somewhat poorly drained soils that formed in alkaline, clayey alluvium. These soils are on floods plains in the Blackland Prairie. They are subject to flooding for brief periods one or more times during late winter and early

spring in most years. Slopes are 0 to 1 percent. These soils are fine, smectitic, thermic Chromic Epiaquerts.

Sucarnoochee soils are commonly associated on the landscape with Faunsdale, Okolona, Sumter, and Vaiden soils. These associated soils are on uplands adjacent to areas of the Sucarnoochee soils and are not subject to flooding. Faunsdale and Okolona soils have olive or brownish colors in the subsoil. Sumter soils are moderately deep over bedrock. Vaiden soils are acid in the upper part of the subsoil.

Typical pedon of Sucarnoochee silty clay, 0 to 1 percent slopes, frequently flooded; about 1.6 miles northwest of Memphis, 3,485 feet west and 1,230 feet south of the northeast corner of sec. 16, T. 22 S., R. 17 W.

Ap—0 to 10 inches; very dark grayish brown (2.5Y 3/2) silty clay; moderate medium granular structure; firm; many fine roots; slightly alkaline; clear smooth boundary.

AB—10 to 23 inches; dark grayish brown (2.5Y 4/2) clay; moderate medium angular blocky structure; firm; common fine roots; few fine black nodules of iron and manganese oxides; common medium distinct light olive brown (2.5Y 5/4) masses of iron accumulation; slightly effervescent; moderately alkaline; gradual smooth boundary.

Bssg1—23 to 36 inches; dark gray (2.5Y 4/1) clay; coarse wedge-shaped fragments that part to strong fine and medium angular blocky structure; very firm; few fine roots on faces of peds; common large intersecting slickensides that have distinct, polished and grooved surfaces; few fine nodules of calcium carbonate; few fine black nodules of iron and manganese oxides; common fine and medium distinct yellowish brown (10YR 5/6) and strong brown (7.5YR 5/6) masses of iron accumulation; slightly effervescent; slightly alkaline; gradual wavy boundary.

Bssg2—36 to 65 inches; dark gray (2.5Y 4/1) clay; coarse wedge-shaped fragments that part to strong medium angular blocky structure; very firm; few fine roots on faces of peds; common large intersecting slickensides that have distinct, polished and grooved surfaces; few fine nodules of calcium carbonate; few fine soft black masses of iron and manganese oxides; many fine and medium distinct yellowish brown (10YR 5/6) and strong brown (7.5YR 5/6) masses of iron accumulation; moderately effervescent; slightly alkaline.

The solum is more than 60 inches thick. Reaction ranges from neutral to moderately alkaline throughout the profile.

The A or Ap horizon has hue of 10YR or 2.5Y, value of 3 or 4, and chroma of 2 or 3.

The AB horizon, if it occurs, has hue of 10YR to 5Y, value of 3 or 4, and chroma of 1 to 3. It has few or common redoximorphic accumulations in shades of brown or olive. The texture is silty clay or clay.

The Bssg horizon has hue of 10YR to 5Y, value of 4 or 5, and chroma of 1 or 2; or it has no dominant matrix color and is multicolored in shades of brown, olive, yellow, and gray. It has few to many redoximorphic depletions in shades of gray and few to many redoximorphic accumulations in shades of brown and olive. The texture is silty clay or clay.

The Bkss horizon, if it occurs, generally has no dominant matrix color and is multicolored in shades of olive, brown, and gray. It has few to many soft masses or nodules of calcium carbonate.

Sumter Series

The Sumter series consists of moderately deep, well drained soils that formed in alkaline, loamy and clayey residuum derived from soft limestone (chalk). These soils are on ridgetops and side slopes in the uplands of the Blackland Prairie. Slope ranges from 1 to 12 percent. These soils are fine-silty, carbonatic, thermic Rendollic Eutrochrepts.

Sumter soils are commonly associated on the landscape with Faunsdale, Okolona, Sucarnoochee, and Vaiden soils. Faunsdale and Okolona soils are very deep and have vertic properties. Faunsdale soils are in slightly lower positions than the Sumter soils. Okolona soils are in slightly higher positions than the Sumter soils. Sucarnoochee soils are on flood plains adjacent to areas of the Sumter soils and are subject to frequent flooding. Vaiden soils are in lower positions than the Sumter soils. They are very deep and are acid in the upper part of the subsoil.

Typical pedon of Sumter silty clay loam, 1 to 5 percent slopes, eroded; about 3 miles west of Cochrane, 1,000 feet north and 200 feet east of the southwest corner of sec. 10, T. 24 N., R. 3 W.

Ap—0 to 5 inches; olive gray (5Y 5/2) silty clay loam; moderate medium granular structure; friable; many fine and medium roots; few fine soft masses of calcium carbonate; strongly effervescent; neutral; clear smooth boundary.

Bk1—5 to 10 inches; pale olive (5Y 6/4) clay; moderate medium subangular blocky structure; common fine and medium roots; common fine nodules and soft masses of calcium carbonate; strongly effervescent; slightly alkaline; gradual wavy boundary.

Bk2—10 to 19 inches; light yellowish brown (2.5Y 6/4) clay; moderate medium subangular blocky structure; firm; common fine roots; common fine nodules and soft masses of calcium carbonate; few fine fragments of chalk; few medium distinct yellowish brown (10YR 5/6) masses of iron accumulation; few fine faint grayish brown (2.5Y 5/2) iron depletions; strongly effervescent; slightly alkaline; gradual wavy boundary.

Bk3—19 to 27 inches; light olive brown (2.5Y 5/4) clay; weak medium subangular blocky structure; firm; common fine nodules and many soft masses of calcium carbonate; common fine fragments of chalk; strongly effervescent; moderately alkaline; abrupt wavy boundary.

Cr—27 to 65 inches; light brownish gray (2.5Y 6/2) soft limestone (chalk); strong medium and thick platy rock structure; very firm; few fine roots in fractures; violently effervescent; slightly alkaline.

The thickness of the solum and the depth to soft limestone (chalk) range from 20 to 40 inches. Reaction ranges from neutral to moderately alkaline in the surface layer and is slightly alkaline or moderately alkaline in the subsoil.

The Ap or A horizon has hue of 10YR or 2.5Y, value of 3 to 5, and chroma of 1 or 2.

The Bk horizon has hue of 2.5Y or 5Y, value of 4 to 7, and chroma of 3 to 6. The number of redoximorphic accumulations in shades of olive and brown ranges from none to common. The horizon has common or many nodules and soft masses of calcium carbonate. In most pedons it has fragments of soft limestone (chalk). The content of these fragments ranges from 2 to 15 percent, by volume, and generally increases with depth. The texture is silty clay loam, silty clay, or clay.

The Cr horizon is level-bedded, soft limestone (chalk). It is massive or has platy rock structure. It restricts plant roots, but it can be cut with hand tools and is rippable by light equipment. It has hue of 2.5Y or 5Y, value of 5 to 7, and chroma of 1 to 4. In some areas it has discontinuous lenses of hard limestone.

Una Series

The Una series consists of very deep, poorly drained soils that formed in acid, clayey alluvium. These soils are in depressional areas on the flood plains along the Tombigbee River and are subject to frequent flooding and ponding for long periods in winter and spring in most years. Slopes are 0 to 1 percent. These soils are fine, mixed, active, acid, thermic Typic Epiaquepts.

Una soils are commonly associated on the landscape with Mooreville, Riverview, and Urbo soils. Mooreville and Riverview soils are in slightly higher, more convex positions on the flood plains than the Una soils. They are fine-loamy. Urbo soils are in slightly higher positions than the Una soils and are somewhat poorly drained.

Typical pedon of Una silty clay loam, in an area of Urbo-Mooreville-Una complex, gently undulating, frequently flooded; about 2.5 miles southwest of Aliceville, 1,420 feet north and 1,025 feet east of the southwest corner of sec. 5, T. 24 N., R. 16 W.

A—0 to 4 inches; very dark grayish brown (10YR 3/2) silty clay loam; weak fine granular structure; friable; many fine roots; common fine soft black masses of iron and manganese oxides; strongly acid; clear smooth boundary.

Bg1—4 to 18 inches; grayish brown (10YR 5/2) clay; weak medium subangular blocky structure; firm; common fine and medium roots; common fine black nodules of iron and manganese oxides; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation; very strongly acid; clear wavy boundary.

Bg2—18 to 42 inches; light brownish gray (2.5Y 6/2) clay; weak medium subangular blocky structure; firm; few fine roots; common fine black nodules and soft black masses of iron and manganese oxides; common medium distinct dark yellowish brown (10YR 4/4) and yellowish brown (10YR 5/6) masses of iron accumulation; strongly acid; gradual wavy boundary.

Bg3—42 to 53 inches; gray (10YR 6/1) clay; weak coarse subangular blocky structure; firm; common fine black nodules and soft black masses of iron and manganese oxides; many medium prominent yellowish red (5YR 5/6) and common medium distinct dark yellowish brown (10YR 4/4) masses of iron accumulation; very strongly acid; gradual wavy boundary.

Bg4—53 to 65 inches; gray (10YR 6/1) clay; weak coarse subangular blocky structure; firm; few fine black nodules of iron and manganese oxides; common medium prominent yellowish brown (10YR 5/6) and strong brown (7.5YR 5/6) masses of iron accumulation; very strongly acid.

The solum is more than 60 inches thick. Reaction is very strongly acid or strongly acid throughout the profile.

The A horizon has hue of 10YR or 2.5Y, value of 3 to 5, and chroma of 1 or 2. The number of redoximorphic accumulations in shades of yellow and brown ranges from none to many.

The Bg horizon has hue of 10YR to 5Y, value of 5 or

6, and chroma of 1 or 2. It has few to many redoximorphic accumulations in shades of brown, red, or yellow. The texture is silty clay loam, silty clay, or clay.

Urbo Series

The Urbo series consists of very deep, somewhat poorly drained soils that formed in clayey alluvium. These soils are on the flood plains along the Tombigbee River and are subject to frequent flooding for brief periods in winter and spring in most years. Slopes range from 0 to 2 percent. These soils are fine, mixed, active, acid, thermic Vertic Epiaquepts.

Urbo soils are commonly associated on the landscape with Mooreville, Riverview, and Una soils. Mooreville and Riverview soils are in slightly higher, more convex positions than those of the Urbo soils. They are fine-loamy. Una soils are in slightly lower, more concave positions on the flood plains than the Urbo soils and are poorly drained.

Typical pedon of Urbo silty clay loam, in an area of Urbo-Mooreville-Una complex, gently undulating, frequently flooded; about 2.5 miles west of Aliceville, 2,435 feet north and 2,030 feet west of the southeast corner of sec. 29, T. 22 S., R. 16 W.

A—0 to 4 inches; dark grayish brown (10YR 4/2) silty clay loam; weak fine granular structure; friable; many fine roots; strongly acid; clear smooth boundary.

Bw—4 to 12 inches; dark brown (10YR 4/3) silty clay; weak fine subangular blocky structure; firm; common fine roots; few fine faint dark brown (10YR 3/3) masses of iron accumulation; strongly acid; clear wavy boundary.

Bg1—12 to 20 inches; grayish brown (10YR 5/2) clay; weak medium subangular blocky structure; firm; few fine and medium roots; common fine black nodules of iron and manganese oxides; common medium distinct dark yellowish brown (10YR 4/4) masses of iron accumulation; common fine faint dark grayish brown (10YR 4/2) iron depletions; very strongly acid; gradual wavy boundary.

Bg2—20 to 32 inches; grayish brown (2.5Y 5/2) silty clay; moderate medium subangular blocky structure; firm; few fine roots; few fine and medium black nodules of iron and manganese oxides; common medium distinct yellowish brown (10YR 5/8) and strong brown (7.5YR 5/8) masses of iron accumulation; strongly acid; gradual wavy boundary.

Bssg1—32 to 46 inches; grayish brown (2.5Y 5/2) silty clay; weak coarse subangular blocky structure; firm; few fine roots; few large intersecting slickensides that have faint, slightly grooved surfaces; few fine and medium black nodules of iron and manganese oxides; common medium distinct yellowish brown (10YR 5/6) and strong brown (7.5YR 5/6) masses of iron accumulation; strongly acid; gradual wavy boundary.

Bssg2—46 to 65 inches; grayish brown (2.5Y 5/2) clay; weak coarse subangular blocky structure; firm; few large intersecting slickensides that have distinct, polished and grooved surfaces; few fine black nodules of iron and manganese oxides; common medium distinct yellowish brown (10YR 5/6) and strong brown (7.5YR 5/6) masses of iron accumulation; strongly acid.

The solum is more than 60 inches thick. Reaction is very strongly acid or strongly acid throughout the profile, except for the surface layer in areas where lime has been added.

The A or Ap horizon has hue of 10YR, value of 3 to 5, and chroma of 2 or 3.

The Bw horizon, if it occurs, has hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 3 or 4. It has few to many redoximorphic accumulations in shades of brown and yellow and few to many redoximorphic depletions in shades of gray. The texture is silty clay loam, clay loam, silty clay, or clay.

The Bg and Bssg horizons have hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 1 or 2. It has common or many redoximorphic accumulations in shades of brown, red, or yellow. The texture is silty clay loam, clay loam, silty clay, or clay.

Vaiden Series

The Vaiden series consists of very deep, somewhat poorly drained soils that formed in acid, clayey sediments and the underlying alkaline clay or soft limestone (chalk). These soils are on broad ridgetops and gentle side slopes in the uplands of the Blackland Prairie. Slopes range from 0 to 3 percent. These soils are very-fine, smectitic, thermic Aquic Dystruderts.

Vaiden soils are commonly associated on the landscape with Faunsdale, Okolona, Sucarnoochee, and Sumter soils. Faunsdale and Okolona soils are in slightly higher positions than the Vaiden soils. They have a dark surface layer and are alkaline in the upper part of the solum. Sucarnoochee soils are on flood plains adjacent to areas of the Vaiden soils and are alkaline throughout. Sumter soils are in higher positions than the Vaiden soils and are moderately deep over bedrock.

Typical pedon of Vaiden silty clay, 0 to 1 percent slopes; about 2.5 miles southwest of Cochrane, 1,210

feet north and 800 feet west of the southeast corner of sec. 16, T. 24 N., R. 17 W.

Ap—0 to 7 inches; dark grayish brown (10YR 4/2) silty clay; weak medium subangular blocky structure; firm; many medium and fine roots; strongly acid; abrupt smooth boundary.

Btss1—7 to 19 inches; yellowish brown (10YR 5/6) clay; weak coarse subangular blocky structure parting to strong medium angular blocky; very firm; common fine roots on faces of peds; few large intersecting slickensides that have faint, slightly grooved surfaces; few fine prominent red (2.5YR 4/6) masses of iron accumulation; many medium distinct light brownish gray (2.5Y 6/2) and gray (2.5Y 6/1) iron depletions; very strongly acid; clear wavy boundary.

Btss2—19 to 35 inches; yellowish brown (10YR 5/6) clay; weak coarse subangular blocky structure parting to strong fine and medium angular blocky; very firm; few fine roots on faces of peds; common large intersecting slickensides that have distinct, polished and grooved surfaces; common medium distinct strong brown (7.5YR 4/6) masses of iron accumulation; many fine and medium distinct gray (10YR 6/1) iron depletions; very strongly acid; gradual wavy boundary.

Bss1—35 to 45 inches; clay, yellowish brown (10YR 5/6) interior and gray (5Y 6/1) exterior; moderate coarse and very coarse angular blocky structure; very firm; common large intersecting slickensides that have prominent, polished and grooved surfaces; common fine prominent yellowish red (5YR 4/6) masses of iron accumulation in peds; common fine and medium distinct light brownish gray (10YR 6/2) iron depletions; areas of gray on faces of peds are iron depletions; strongly acid; gradual wavy boundary.

Bss2—45 to 65 inches; clay, yellowish brown (10YR 5/6) interior and light brownish gray (10YR 6/2) exterior; moderate coarse and very coarse angular blocky structure; very firm; common large intersecting slickensides that have prominent, polished and grooved surfaces; common fine black nodules of iron and manganese oxides; many fine distinct gray (10YR 5/1) iron depletions in peds; areas of light brownish gray on faces of peds are iron depletions; slightly acid.

The depth to horizons that have secondary carbonates ranges from 36 to 80 inches. The depth to soft limestone (chalk) is more than 60 inches.

The A or Ap horizon has hue of 10YR, value of 3 or 4, and chroma of 2 or 3. Reaction is very strongly acid or strongly acid, except in areas where lime has been added.

The Btss horizon has hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 4 to 8; or it does not have a dominant matrix color and is multicolored in shades of brown, gray, red, and yellow. It has common or many redoximorphic depletions in shades of gray and common or many redoximorphic accumulations in shades of brown, red, and yellow. Reaction is very strongly acid or strongly acid.

The Bss horizon has hue of 10YR, 2.5Y, or 5Y and value of 5 or 6 and has chroma of 4 to 8 in ped interiors and 1 or 2 on ped exteriors and on faces of slickensides; or it does not have a dominant matrix color and is multicolored in shades of gray, brown, olive, and red. It has common or many redoximorphic depletions in shades of gray and common or many redoximorphic accumulations in shades of brown, olive, and red. Reaction ranges from very strongly acid to slightly acid.

The Bkss horizon, if it occurs, has hue of 10YR, 2.5Y, or 5Y and value of 4 to 6. It has chroma of 4 to 6 in ped interiors and 1 or 2 on the exterior of peds and on faces of slickensides. It has few to many redoximorphic depletions in shades of gray and few to many redoximorphic accumulations in shades of brown and olive. It has few to many nodules and soft masses of calcium carbonate. Reaction ranges from neutral to moderately alkaline. The texture is clay or silty clay.

The 2C horizon, if it occurs, is highly weathered soft chalk or alkaline clay. It is massive or has platy rock structure. Some pedons have a 2Cr horizon below a depth of 60 inches. It is soft limestone (chalk). It can be dug with hand tools and is rippable by light equipment.

Formation of the Soils

In this section, the factors of soil formation are related to the soils in Pickens County, the processes of horizon differentiation are explained, and the surface geology of the county is described.

Factors of Soil Formation

Soil is a natural, three-dimensional body on the earth's surface that supports plants. Soil forms through weathering and other processes that act on deposited or accumulated geologic material. The kind of soil that forms depends on the type of parent material; the climate under which soil material has existed since accumulation; the relief, or lay of the land; the plant and animal life in and on the soil; and the length of time that the forces of soil formation have acted on the soil material. The relative importance of each of these factors differs from place to place; in some areas, one factor is more important, and in other areas another may dominate. A modification or variation in any of the factors results in a different kind of soil.

Climate and living organisms are the active factors of soil formation. They act on parent material and change it to a natural body with definite characteristics. The effects of climate and living organisms are conditioned by relief, which influences surface drainage, the amount of water that percolates through the soil, the rate of erosion, and the kind of vegetation that grows on the soil. The nature of the parent material also affects the kind of soil profile that is formed. Time is needed for the parent material to change into a soil. The development of a distinct soil horizon normally requires a long period of time.

Parent Material

The soils of Pickens County formed mainly in three kinds of parent material; loamy and clayey marine sediment that has undergone considerable weathering in place, water-deposited material on stream terraces and flood plains, and materials weathered from soft limestone (chalk). Luverne, Sacul, and Smithdale soils formed in the weathered, loamy and clayey marine sediment. Annemaine, Bama, Bigbee, Cahaba, Columbus, Iuka, Kinston, Lucedale, Mantachie, Mooreville, Myatt, Ocholokonee, Riverview, Savannah, Sucarnoochee, Una, and Urbo soils formed in the water-deposited material on stream terraces and flood plains. Faunsdale, Okolona, Sumter, and Vaiden soils formed in the materials weathered from soft limestone (chalk).

Climate

The climate of Pickens County is warm and humid. Summers are long and hot. Winters are short and mild, and the ground rarely freezes to a depth of more than a few inches. The climate is fairly even throughout the county and accounts for few differences between the soils. Rainfall averages 54 inches a year.

This mild, humid climate favors rapid decomposition of organic matter and hastens chemical reaction in the soil. The plentiful rainfall leaches large amounts of soluble bases and carries the less soluble fine particles downward, resulting in acid soils that have a sandy surface layer and that are low in natural fertility. The large amount of moisture and the warm temperature favor the growth of bacteria and fungi and speed the decomposition of organic matter, resulting in soils that have a low content of organic matter.

Relief

Relief influences the formation of soil through its effect on drainage, runoff, and erosion. In Pickens County, the topography ranges from nearly level to steep. The elevation ranges from about 120 to 580 feet above sea level. Large flat areas and depressions generally are poorly drained, and accumulated water, received mainly as runoff from adjacent areas, retards soil formation. As slope increases, the hazard of erosion becomes greater, and runoff increases, but less water soaks into the soil and leaching decreases. In places, erosion nearly keeps pace with soil formation; therefore, soils on steep slopes are generally thin and weakly developed.

The aspect of slope affects the microclimate. Soils that have slopes facing the south or southwest warm up somewhat earlier in spring and generally reach a higher temperature each day than those facing north. As a result, soils that have south- or southwest-facing slopes have accelerated chemical weathering. Soils that have north-facing slopes retain moisture longer

because they are shaded for longer periods and have a lower temperature. In Pickens County, differences caused by the direction of slope are slight and of minor importance in soil formation.

Plants and Animals

Living organisms greatly influence the processes of soil formation and the characteristics of the soils. Trees, grasses, earthworms, rodents, fungi, bacteria, and other forms of plant and animal life are affected by the other soil-forming factors. Animal activity is largely confined to the surface layer of the soil. The soil is continually mixed by this activity, which improves water infiltration. Plant roots create channels through which air and water move more rapidly, thereby improving soil structure and increasing the rate of chemical reactions in the soil.

Microorganisms help to decompose organic matter, which releases plant nutrients and chemicals into the soil. These nutrients are either used by the plants or are leached from the soil. Human activities that influence the plant and animal populations in the soil affect the future rate of soil formation.

The native vegetation in the uplands of Pickens County consisted of coniferous and deciduous trees as the dominant overstory. The understory species were holly, panicums, bluestems, American beautyberry, Indiangrass, longleaf uniola, and flowering dogwood. These species represent only a very limited variety that once grew in the county and can be used as a guide to plants presently in the county.

The species distribution of fauna also reflect the plant communities. Animals have an impact on the soil properties of a particular area. For example, worms, moles, armadillo, and gophers can improve aeration in a compacted soil. Microbes that thrive in a particular plant community will react to various soil conditions and consequently influence the soil profile by providing decayed organic matter and nitrogen to the soil matrix.

Time

If all other factors of soil formation are equal, the degree of soil formation is in direct proportion to time. If soil-forming factors have been active for a long time, horizon development is stronger than if these same factors have been active for a relatively short time.

Geologically, the soils in Pickens County are relatively young. The youngest soils are the alluvial soils on active flood plains of streams and rivers. These soils receive deposits of sediment and are undergoing a cumulative soil-forming process. In most cases, these young soils have very weakly defined horizons, mainly because the soil-forming processes have only been active for a short time. The Bigbee, Iuka, Kinston, Mantachie, Mooreville, Ochlockonee, Riverview, Sucarnoochee, Una, and Urbo soils are examples of young soils.

Soils on terraces along the Tombigbee and Sipsey Rivers are older than soils on flood plains but are still relatively young. They formed in material deposited by the rivers, but the river channels are now deeper and the overflow no longer reaches these soils as frequently. Many of these soils have relatively strong horizon development. The Annemaine, Bama, Cahaba, Columbus, Lucedale, Myatt, and Savannah soils are examples of soils on stream terraces of varying age.

The oldest soils in the county are on uplands and formed in marine sediment that has undergone considerable weathering. The Luverne, Sacul, and Smithdale soils are examples. Soils on uplands of the Blackland Prairie have undergone considerable weathering but are relatively weakly developed because of the high content of smectitic clays. Examples are Faunsdale, Okolona, Sumter, and Vaiden soils.

Processes of Horizon Differentiation

The main processes involved in the formation of soil horizons are accumulation of organic matter, leaching of calcium carbonate and bases, reduction and transfer of iron, and formation and translocation of silicate clay minerals. These processes can occur in combination or individually, depending on the integration of the factors of soil formation.

Most soils have four main horizons. The A horizon is the surface layer. It is the horizon of maximum accumulation of organic matter. The E horizon, usually called the subsurface layer, is the horizon of maximum loss of soluble or suspended material. Sacul and Savannah soils have both an A horizon and an E horizon. Other soils have an A horizon but do not have an E horizon. The Mantachie soils are an example. Organic matter has accumulated in the surface layer of all soils in Pickens County to form an A horizon. The content of organic matter varies in different soils because of differences in relief, wetness, and natural fertility.

The B horizon, which is usually called the subsoil, is immediately below the A or E horizon. It is the horizon of maximum accumulation of dissolved or suspended material, such as iron or clay. The B horizon has not yet developed in very young soils, such as Bigbee and Iuka soils.

The C horizon is the substratum. It has been affected very little by the soil forming processes, but it may be somewhat modified by weathering.

The chemical reduction and transfer of iron, called gleying, is evident in the wet soils in the county. Gleying results in gray colors in the subsoil and gray mottles in other horizons. The gray color indicates the reduction and loss of iron and manganese. The horizons of some soils have brownish or reddish mottles, which indicate a segregation of iron. The Savannah soils are an example.

Leaching of carbonates and bases has occurred in most of the soils in the county. This process contributes to the development of distinct horizons and to the naturally low fertility and acid reaction of most soils in the Coastal Plain. Some soils of the Blackland Prairie formed in materials weathered from soft limestone (chalk). They are high in natural fertility and are alkaline throughout the profile. Examples are Faunsdale, Okolona, Sucarnoochee, and Sumter soils.

In uniform materials, natural drainage generally is closely associated with slope or relief. It generally affects the color of the soil. Soils that formed under good drainage conditions have a subsoil that is uniformly bright in color. Examples are Bama and Lucedale soils. Soils that formed under poor drainage conditions are grayish. Examples are Kinston, Myatt, Una, and Urbo soils. Soils that formed where drainage is intermediate have a subsoil that is mottled in shades of gray and brown. Examples are Columbus and Mantachie soils. The grayish colors persists even after artificial drainage is provided. The dark grayish brown colors in the upper part of the Sucarnoochee soils are assumed to be inherited from the color of the parent material.

In steep areas, the surface soil erodes. In low areas or depressions, soil materials often accumulate and add to the thickness of the surface soil. In some areas, the rate of formation of soil material and the rate of removal are in equilibrium. The eluviation of clay from the E horizon to the Bt horizon is also related to the degree of relief.

Surface Geology

The geological formations in Pickens County are sedimentary and range in age from late Cretaceous to Recent. These formations consist mainly of unconsolidated sediments of sand, silt, clay, and gravel and layers of soft limestone (chalk) and shale. The geologic units in the county, listed from oldest to youngest, include the Coker and Gordo Formations of the Tuscaloosa Group; the McShan and Eutaw Formations; the Mooreville and Demopolis Chalks of the Selma Group; high terrace deposits of Pleistocene Age; and low terrace and alluvial deposits of Recent and Holocene Age. All of the formations, except the terrace and alluvial deposits, crop out in northwest- to southeast-trending belts across the county (21, 22).

The Coker Formation is in the lower part of the Tuscaloosa Group and is the oldest geological unit exposed in Pickens County. It crops out in the northeastern part of the county. It is about 450 feet thick in the area of outcrop. The upper part of the formation consists of carbonaceous clay and crossbedded micaceous sand containing some chert gravel. The next part consists of alternating thin beds of fine-grained glauconitic sand and laminated clay. The lower part consists of sand and gravel and irregular beds of carbonaceous clay. Soils that formed in material weathered from this formation include Luverne, Sacul, and Smithdale soils.

The Gordo Formation overlies the Coker Formation and crops out in the eastern part of the county. It is about 270 feet thick in the area of outcrop. The upper part of the formation consists of lenticular, mottled clay and beds of crossbedded fine to coarse sand. The lower part consists of gravelly, poorly sorted sand containing thin lenses of carbonaceous clayey sand and purplish clay. Soils that formed in material weathered from this formation include Luverne, Sacul, and Smithdale soils.

The McShan Formation overlies the Gordo Formation. It was originally considered the lower part of the Eutaw Formation and has lithology similar to that of the Gordo Formation. It crops out diagonally across the central part of the county and is about 250 feet thick. It consists of alternating thin beds of crossbedded to laminated and rippled, fine to coarse-grained, glauconitic sand and light gray, laminated clay. Soils that formed in material weathered from this formation include Luverne, Sacul, and Smithdale soils.

The Eutaw Formation overlies the McShan Formation and crops out diagonally across the western part of the county. It is divided into two parts. The upper part, the Tombigbee Sand Member, consists of a massive bed of glauconitic sand containing fossil shells and layers of calcareous sandstone. Sumter soils formed in material weathered from this member. The lower part of the Eutaw Formation consists of alternating beds of crossbedded fine- to medium-grained, glauconitic sand and gray, laminated clay. Soils that formed in material weathered from the lower part of the Eutaw Formation include Luverne, Sacul, and Smithdale soils.

Units of the Selma Group overlie the Eutaw Formation. The Mooreville and Demopolis Chalks are the lower two units of the Selma Group. The Mooreville Chalk crops out near Pickensville, and the Demopolis Chalk crops out in the uplands southwest of the Tombigbee River. These two units

consist mainly of dense, grayish chalk or soft limestone. Soils that formed in material weathered from these units include Faunsdale, Okolona, Sumter, and Vaiden soils.

High terrace deposits, primarily of Pleistocene Age, lie unconformably on older formations along the Tombigbee and Sipsey Rivers and some of the larger tributaries. They are remnants of older flood plains formed by streams that occupied the valleys during earlier stages of development. They consist of poorly sorted deposits of reddish brown, yellowish brown, yellowish red, and gray gravel, sand, silt, and clay. The soils that formed in this material include Bama, Lucedale, Savannah, and Smithdale soils.

Alluvial deposits of Recent age and low terrace deposits of Holocene age are along the Tombigbee and Sipsey Rivers and in stream valleys throughout the county. They overlie older geologic units and are generally 1 to 60 feet thick. They consist of deposits of brownish, reddish, and grayish sand, gravel, clay, and silt. Bigbee, Iuka, Kinston, Mantachie, Mooreville, Ochlockonee, Riverview, Sucarnoochee, Una, and Urbo soils are on active flood plains. Annemaine, Cahaba, Columbus, and Myatt soils are on low terraces.

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Glossary

ABC soil. A soil having an A, a B, and a C horizon.

AC soil. A soil having only an A and a C horizon. Commonly, such soil formed in recent alluvium or on steep, rocky slopes.

Aeration, soil. The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alluvial fan. The fanlike deposit of a stream where it issues from a gorge upon a plain or of a tributary stream near or at its junction with its main stream.

Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.

Alpha,alpha-dipyridyl. A dye that when dissolved in 1N ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction indicates a type of redoximorphic feature.

Animal unit month (AUM). The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

Aquic conditions. Current soil wetness characterized by saturation, reduction, and redoximorphic features.

Area reclaim (in tables). An area difficult to reclaim after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

Argillic horizon. A subsoil horizon characterized by an accumulation of illuvial clay.

Aspect. The direction in which a slope faces.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low	0 to 3
Low	3 to 6
Moderate	6 to 9
High	9 to 12
Very high	more than 12

Backslope. The geomorphic component that forms the steepest inclined surface and principal element of many hillsides. Backslopes in profile are commonly steep, are linear, and may or may not include cliff segments.

Basal area. The area of a cross section of a tree, generally referring to the section at breast height and measured outside the bark. It is a measure of stand density, commonly expressed in square feet.

Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.

Bedding planes. Fine strata, less than 5 millimeters thick, in unconsolidated alluvial, eolian, lacustrine, or marine sediment.

Bedding system. A drainage system made by plowing, grading, or otherwise shaping the surface of a flat field. It consists of a series of low ridges separated by shallow, parallel dead furrows.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bedrock-controlled topography. A landscape where the configuration and relief of the landforms are determined or strongly influenced by the underlying bedrock.

Bench terrace. A raised, level or nearly level strip of earth constructed on or nearly on a contour, supported by a barrier of rocks or similar material, and designed to make the soil suitable for tillage and to prevent accelerated erosion.

Bisequum. Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

Bottom land. The normal flood plain of a stream, subject to flooding.

Breast height. An average height of 4.5 feet above the

ground surface; the point on a tree where diameter measurements are ordinarily taken.

Cable yarding. A method of moving felled trees to a nearby central area for transport to a processing facility. Most cable yarding systems involve use of a drum, a pole, and wire cables in an arrangement similar to that of a rod and reel used for fishing. To reduce friction and soil disturbance, felled trees generally are reeled in while one end is lifted or the entire log is suspended.

Calcareous soil. A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.

Canopy. The leafy crown of trees or shrubs. (See Crown.)

Capillary water. Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.

Catena. A sequence, or "chain," of soils on a landscape that formed in similar kinds of parent material but have different characteristics as a result of differences in relief and drainage.

Cation. An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

Cation-exchange capacity. The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.

Chemical treatment. Control of unwanted vegetation through the use of chemicals.

Chiseling. Tillage with an implement having one or more soil-penetrating points that shatter or loosen hard, compacted layers to a depth below normal plow depth.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay depletions. Low-chroma zones having a low content of iron, manganese, and clay because of the chemical reduction of iron and manganese and the removal of iron, manganese, and clay. A type of redoximorphic depletion.

Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

Climax plant community. The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.

Coarse textured soil. Sand or loamy sand.

Complex slope. Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.

Complex, soil. A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.

Compressible (in tables). Excessive decrease in volume of soft soil under load.

Concretions. Cemented bodies with crude internal symmetry organized around a point, a line, or a plane. They typically take the form of concentric layers visible to the naked eye. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up concretions. If formed in place, concretions of iron oxide or manganese oxide are generally considered a type of redoximorphic concentration.

Conservation cropping system. Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

Conservation tillage. A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil. Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the "Soil Survey Manual."

Contour stripcropping. Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Corrosion. Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Cropping system. Growing crops according to a planned system of rotation and management practices.

Crop residue management. Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.

Cross-slope farming. Deliberately conducting farming operations on sloping farmland in such a way that tillage is across the general slope.

Crown. The upper part of a tree or shrub, including the living branches and their foliage.

Culmination of the mean annual increment (CMAI). The average annual increase per acre in the volume of a stand. Computed by dividing the total volume of the stand by its age. As the stand increases in age, the mean annual increment continues to increase until mortality begins to reduce the rate of increase. The point where the stand reaches its maximum annual rate of growth is called the culmination of the mean annual increment.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

Decreasers. The most heavily grazed climax range plants. Because they are the most palatable, they are the first to be destroyed by overgrazing.

Deferred grazing. Postponing grazing or resting grazing land for a prescribed period.

Dense layer (in tables). A very firm, massive layer that has a bulk density of more than 1.8 grams per cubic centimeter. Such a layer affects the ease of digging and can affect filling and compacting.

Depth, soil. Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.

Depth to rock (in tables). Bedrock is too near the surface for the specified use.

Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Divided-slope farming. A form of field stripcropping in which crops are grown in a systematic arrangement of two strips, or bands, across the slope to reduce the hazard of water erosion. One strip is in a close-growing crop that provides protection from erosion, and the other strip is in a crop that provides less protection from erosion. This practice is used where slopes are not long enough to permit a full stripcropping pattern to be used.

Drainage class (natural). Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized—*excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained,* and *very poorly drained*. These classes are defined in the "Soil Survey Manual."

Drainage, surface. Runoff, or surface flow of water, from an area.

Duff. A generally firm organic layer on the surface of mineral soils. It consists of fallen plant material that is in the process of decomposition and includes everything from the litter on the surface to underlying pure humus.

Eluviation. The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

Endosaturation. A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.

Ephemeral stream. A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is above the water table at all times.

Episaturation. A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and

resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.

Escarpment. A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. Synonym: scarp.

Excess fines (in tables). Excess silt and clay in the soil. The soil does not provide a source of gravel or sand for construction purposes.

Excess lime (in tables). Excess carbonates in the soil that restrict the growth of some plants.

Fallow. Cropland left idle in order to restore productivity through accumulation of moisture. Summer fallow is common in regions of limited rainfall where cereal grain is grown. The soil is tilled for at least one growing season for weed control and decomposition of plant residue.

Fast intake (in tables). The rapid movement of water into the soil.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the ovendry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity, normal moisture capacity,* or *capillary capacity*.

Fill slope. A sloping surface consisting of excavated soil material from a road cut. It commonly is on the downhill side of the road.

Fine textured soil. Sandy clay, silty clay, or clay.

Firebreak. Area cleared of flammable material to stop or help control creeping or running fires. It also serves as a line from which to work and to facilitate the movement of firefighters and equipment. Designated roads also serve as firebreaks.

First bottom. The normal flood plain of a stream, subject to frequent or occasional flooding.

Flood plain. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

Fluvial. Of or pertaining to rivers; produced by river action, as a fluvial plain.

Foot slope. The inclined surface at the base of a hill.

Forb. Any herbaceous plant not a grass or a sedge.

Forest cover. All trees and other woody plants (underbrush) covering the ground in a forest.

Forest type. A stand of trees similar in composition and development because of given physical and biological factors by which it may be differentiated from other stands.

Fragile (in tables). A soil that is easily damaged by use or disturbance.

Fragipan. A loamy, brittle subsurface horizon low in porosity and content of organic matter and low or moderate in clay but high in silt or very fine sand. A fragipan appears cemented and restricts roots. When dry, it is hard or very hard and has a higher bulk density than the horizon or horizons above. When moist, it tends to rupture suddenly under pressure rather than to deform slowly.

Genesis, soil. The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Gilgai. Commonly, a succession of microbasins and microknolls in nearly level areas or of microvalleys and microridges parallel with the slope. Typically, the microrelief of clayey soils that shrink and swell considerably with changes in moisture content.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

Graded stripcropping. Growing crops in strips that grade toward a protected waterway.

Grassed waterway. A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

Gravel. Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

Gravelly soil material. Material that is 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.

Green manure crop (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

Ground water. Water filling all the unblocked pores of the material below the water table.

Gully. A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is

of lesser depth and can be smoothed over by ordinary tillage.

Hard bedrock. Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.

Head out. To form a flower head.

High-residue crops. Such crops as small grain and corn used for grain. If properly managed, residue from these crops can be used to control erosion until the next crop in the rotation is established. These crops return large amounts of organic matter to the soil.

Hill. A natural elevation of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well defined outline; hillsides generally have slopes of more than 15 percent. The distinction between a hill and a mountain is arbitrary and is dependent on local usage.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the “Soil Survey Manual.” The major horizons of mineral soil are as follows:

O horizon.—An organic layer of fresh and decaying plant residue.

A horizon.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

E horizon.—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon.—Soft, consolidated bedrock beneath the soil.

Humus. The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydrologic soil groups. Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Impervious soil. A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Increasers. Species in the climax vegetation that increase in amount as the more desirable plants are reduced by close grazing. Increasers commonly are the shorter plants and the less palatable to livestock.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Infiltration capacity. The maximum rate at which water can infiltrate into a soil under a given set of conditions.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Intake rate. The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Less than 0.2	very low
0.2 to 0.4	low
0.4 to 0.75	moderately low
0.75 to 1.25	moderate
1.25 to 1.75	moderately high

1.75 to 2.5 .... high
More than 2.5 .... very high

Intermittent stream. A stream, or reach of a stream, that flows for prolonged periods only when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Invaders. On range, plants that encroach into an area and grow after the climax vegetation has been reduced by grazing. Generally, plants invade following disturbance of the surface.

Iron depletions. Low-chroma zones having a low content of iron and manganese oxide because of chemical reduction and removal, but having a clay content similar to that of the adjacent matrix. A type of redoximorphic depletion.

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation are:

Controlled flooding.—Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.

Corrugation.—Water is applied to small, closely spaced furrows or ditches in fields of close-growing crops or in orchards so that it flows in only one direction.

Drip (or trickle).—Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

Furrow.—Water is applied in small ditches made by cultivation implements. Furrows are used for tree and row crops.

Sprinkler.—Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

Knoll. A small, low, rounded hill rising above adjacent landforms.

Lacustrine deposit. Material deposited in lake water and exposed when the water level is lowered or the elevation of the land is raised.

Landslide. The rapid downhill movement of a mass of soil and loose rock, generally when wet or saturated. The speed and distance of movement, as well as the amount of soil and rock material, vary greatly.

Leaching. The removal of soluble material from soil or other material by percolating water.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Low-residue crops. Such crops as corn used for silage, peas, beans, and potatoes. Residue from these crops is not adequate to control erosion until the next crop in the rotation is established. These crops return little organic matter to the soil.

Low strength. The soil is not strong enough to support loads.

Marl. An earthy, unconsolidated deposit consisting chiefly of calcium carbonate mixed with clay in approximately equal amounts.

Masses. Concentrations of substances in the soil matrix that do not have a clearly defined boundary with the surrounding soil material and cannot be removed as a discrete unit. Common compounds making up masses are calcium carbonate, gypsum or other soluble salts, iron oxide, and manganese oxide. Masses consisting of iron oxide or manganese oxide generally are considered a type of redoximorphic concentration.

Mechanical treatment. Use of mechanical equipment for seeding, brush management, and other management practices.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous area. An area that has little or no natural soil and supports little or no vegetation.

Moderately coarse textured soil. Coarse sandy loam, sandy loam, or fine sandy loam.

Moderately fine textured soil. Clay loam, sandy clay loam, or silty clay loam.

Mollic epipedon. A thick, dark, humus-rich surface horizon (or horizons) that has high base saturation and pedogenic soil structure. It may include the upper part of the subsoil.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size. Descriptive terms are as follows: abundance—*few, common,* and *many;* size—*fine, medium,* and *coarse;* and contrast—*faint, distinct,* and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium,* from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse,* more than 15 millimeters (about 0.6 inch).

Munsell notation. A designation of color by degrees of

three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

Neutral soil. A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

Nodules. Cemented bodies lacking visible internal structure. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up nodules. If formed in place, nodules of iron oxide or manganese oxide are considered types of redoximorphic concentrations.

Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Organic matter. Plant and animal residue in the soil in various stages of decomposition. The content of organic matter in the surface layer is described as follows:

Low	0.5 to 2.0 percent
Medium	2.0 to 4.0 percent
High	4.0 to 8.0 percent

Pan. A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan, fragipan, claypan, plowpan,* and *traffic pan*.

Parent material. The unconsolidated organic and mineral material in which soil forms.

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedon. The smallest volume that can be called "a soil." A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Percolation. The downward movement of water through the soil.

Percs slowly (in tables). The slow movement of water through the soil adversely affects the specified use.

Permeability. The quality of the soil that enables water or air to move downward through the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality. In soil physics, the rate is referred to as "saturated hydraulic conductivity," which is defined in the "Soil Survey Manual." In line with conventional usage in the engineering profession and with traditional usage in published soil surveys, this rate of flow continues to be expressed as "permeability." Terms describing permeability, measured in inches per hour, are as follows:

Extremely slow	0.0 to 0.01 inch
Very slow	0.01 to 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

Phase, soil. A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Piping (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Plinthite. The sesquioxide-rich, humus-poor, highly weathered mixture of clay with quartz and other diluents. It commonly appears as red mottles, usually in platy, polygonal, or reticulate patterns. Plinthite changes irreversibly to an ironstone hardpan or to irregular aggregates on repeated wetting and drying, especially if it is exposed also to heat from the sun. In a moist soil, plinthite can be cut with a spade. It is a form of laterite.

Plowpan. A compacted layer formed in the soil directly below the plowed layer.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poor filter (in tables). Because of rapid or very rapid permeability, the soil may not adequately filter effluent from a waste disposal system.

Poorly graded. Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Poor outlets (in tables). Refers to areas where surface or subsurface drainage outlets are difficult or expensive to install.

Potential rooting depth (effective rooting depth). Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has

no properties restricting the penetration of roots to this depth.

Prescribed burning. Deliberately burning an area for specific management purposes, under the appropriate conditions of weather and soil moisture and at the proper time of day.

Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Proper grazing use. Grazing at an intensity that maintains enough cover to protect the soil and maintain or improve the quantity and quality of the desirable vegetation. This practice increases the vigor and reproduction capacity of the key plants and promotes the accumulation of litter and mulch necessary to conserve soil and water.

Reaction, soil. A measure of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Ultra acid	less than 3.5
Extremely acid	3.5 to 4.4
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Moderately acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Slightly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Redoximorphic concentrations. Nodules, concretions, soft masses, pore linings, and other features resulting from the accumulation of iron or manganese oxide. An indication of chemical reduction and oxidation resulting from saturation.

Redoximorphic depletions. Low-chroma zones from which iron and manganese oxide or a combination of iron and manganese oxide and clay has been removed. These zones are indications of the chemical reduction of iron resulting from saturation.

Redoximorphic features. Redoximorphic concentrations, redoximorphic depletions, reduced matrices, a positive reaction to alpha,alpha-dipyridyl, and other features indicating the chemical reduction and oxidation of iron and manganese compounds resulting from saturation.

Reduced matrix. A soil matrix that has low chroma in situ because of chemically reduced iron (Fe II). The chemical reduction results from nearly continuous wetness. The matrix undergoes a change in hue or chroma within 30 minutes after exposure to air as the iron is oxidized (Fe III). A type of redoximorphic feature.

Regolith. The unconsolidated mantle of weathered rock and soil material on the earth’s surface; the loose earth material above the solid rock.

Relief. The elevations or inequalities of a land surface, considered collectively.

Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.

Rill. A steep-sided channel resulting from accelerated erosion. A rill generally is a few inches deep and not wide enough to be an obstacle to farm machinery.

Road cut. A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Rooting depth (in tables). Shallow root zone. The soil is shallow over a layer that greatly restricts roots.

Root zone. The part of the soil that can be penetrated by plant roots.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Sand. As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sandstone. Sedimentary rock containing dominantly sand-sized particles.

Saturation. Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.

Second bottom. The first terrace above the normal flood plain (or first bottom) of a river.

Sedimentary rock. Rock made up of particles deposited from suspension in water. The chief kinds of sedimentary rock are conglomerate, formed from gravel; sandstone, formed from sand; shale, formed from clay; and limestone or chalk,

formed from soft masses of calcium carbonate. There are many intermediate types. Some wind-deposited sand is consolidated into sandstone.

Seepage (in tables). The movement of water through the soil. Seepage adversely affects the specified use.

Sequum. A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Shale. Sedimentary rock formed by the hardening of a clay deposit.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

Shrink-swell (in tables). The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Silica. A combination of silicon and oxygen. The mineral form is called quartz.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Similar soils. Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.

Slickensides. Polished and grooved surfaces produced by one mass sliding past another. In soils, slickensides may occur at the bases of slip surfaces on the steeper slopes; on faces of blocks, prisms, and columns; and in swelling clayey soils, where there is marked change in moisture content.

Slippage (in tables). Soil mass susceptible to movement downslope when loaded, excavated, or wet.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance. In this survey, classes for simple slopes are as follows:

Level	0 to 1 percent
Nearly level	0 to 2 percent
Very gently sloping	1 to 3 percent
Gently sloping	2 to 5 percent
Moderately sloping	5 to 8 percent
Strongly sloping	8 to 15 percent
Moderately steep	15 to 25 percent
Steep	25 to 35 percent

Classes for complex slopes are as follows:

Level	0 to 1 percent
Nearly level	0 to 2 percent
Gently undulating	0 to 3 percent
Undulating	3 to 8 percent
Gently rolling	5 to 15 percent
Steep	15 to 35 percent

Slope (in tables). Slope is great enough that special practices are required to ensure satisfactory performance of the soil for a specific use.

Slow intake (in tables). The slow movement of water into the soil.

Slow refill (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.

Small stones (in tables). Rock fragments less than 3 inches (7.6 centimeters) in diameter. Small stones adversely affect the specified use of the soil.

Soft bedrock. Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

Stripcropping. Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind erosion and water erosion.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grained* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Stubble mulch. Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind erosion and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling. Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.

Substratum. The part of the soil below the solum.

Subsurface layer. Any surface soil horizon (A, E, AB, or EB) below the surface layer.

Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the “plow layer,” or the “Ap horizon.”

Surface soil. The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.

Taxadjuncts. Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior. Soils are recognized as taxadjuncts only when one or more of their characteristics are slightly outside the range defined for the family of the series for which the soils are named.

Terrace. An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

Terrace (geologic). An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying “coarse,” “fine,” or “very fine.”

Thin layer (in tables). Otherwise suitable soil material that is too thin for the specified use.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toeslope. The outermost inclined surface at the base of a hill; part of a footslope.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Trace elements. Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.

Unstable fill (in tables). Risk of caving or sloughing on banks of fill material.

Upland. Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Valley fill. In glaciated regions, material deposited in stream valleys by glacial meltwater. In nonglaciated regions, alluvium deposited by heavily loaded streams.

Variegation. Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

Water bars. Smooth, shallow ditches or depressional areas that are excavated at an angle across a sloping road. They are used to reduce the downward velocity of water and divert it off and away from the road surface. Water bars can easily be driven over if constructed properly.

Weathering. All physical and chemical changes produced in rocks or other deposits at or near the earth’s surface by atmospheric agents. These

changes result in disintegration and decomposition of the material.

Well graded. Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wilting point (or permanent wilting point). The moisture content of soil, on an ovendry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Windthrow. The uprooting and tipping over of trees by the wind.

Tables

Table 1.--Temperature and Precipitation

(Recorded in the period 1961-87 at Aliceville, Alabama)

Month	Temperature						Precipitation				
	Average daily maximum	Average daily minimum	Average daily	2 years in 10 will have-- Maximum temperature higher than--	2 years in 10 will have-- Minimum temperature lower than--	Average number of growing degree days*	Average	2 years in 10 will have-- Less than--	2 years in 10 will have-- More than--	Average number of days with 0.10 inch or more	Average snowfall
	°F	°F	°F	°F	°F	Units	In	In	In		In
January-----	52.3	30.0	41.1	76	6	37	4.82	2.90	6.55	6	0.8
February----	56.8	32.7	44.8	79	13	52	5.16	2.51	7.46	5	0.0
March-------	66.5	41.1	53.8	85	21	182	6.40	3.29	9.13	6	0.1
April-------	75.5	49.5	62.5	88	30	378	6.23	2.71	9.22	5	0.0
May---------	82.6	57.9	70.2	94	39	619	3.87	1.81	5.65	5	0.0
June--------	89.7	65.9	77.8	101	51	826	3.47	1.67	5.03	4	0.0
July--------	91.9	69.9	80.9	102	59	957	4.65	2.57	6.49	5	0.0
August------	90.9	68.3	79.6	100	58	907	3.14	1.52	4.54	5	0.0
September---	86.6	62.5	74.6	98	43	727	3.25	1.00	5.35	4	0.0
October-----	76.9	49.4	63.2	91	30	408	3.27	1.16	5.02	4	0.0
November----	65.3	40.3	52.8	84	20	155	4.47	2.68	6.07	5	0.0
December----	56.7	33.5	45.1	78	9	70	5.54	3.24	8.01	6	0.0
Yearly:											
Average---	74.3	50.1	62.2	---	---	---	---	---	---	---	---
Extreme---	108	-2	---	103	5	---	---	---	---	---	---
Total-----	---	---	---	---	---	5,318	54.29	37.14	61.31	60	0.9

* A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (50 degrees F).

Table 2.--Freeze Dates in Spring and Fall

(Recorded in the period 1961-87 at Aliceville, Alabama)

Probability	Temperature 24°F or lower	28°F or lower	32°F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	Mar. 13	Mar. 30	Apr. 8
2 years in 10 later than--	Mar. 8	Mar. 24	Apr. 4
5 years in 10 later than--	Feb. 26	Mar. 14	Mar. 27
First freezing temperature in fall:			
1 year in 10 earlier than--	Nov. 6	Oct. 23	Oct. 17
2 years in 10 earlier than--	Nov. 14	Oct. 30	Oct. 21
5 years in 10 earlier than--	Nov. 29	Nov. 12	Oct. 30

Table 3.--Growing Season

(Recorded in the period 1961-87 at Aliceville, Alabama)

Probability	Daily minimum temperature during growing season: Higher than 24°F	Higher than 28°F	Higher than 32°F
	Days	Days	Days
9 years in 10	249	219	201
8 years in 10	259	228	206
5 years in 10	278	244	217
2 years in 10	297	260	227
1 year in 10	307	269	233

Table 4.--Suitability and Limitations of General Soil Map Units for Specified Uses

Map unit	Extent of area	Cultivated crops	Pasture and hayland	Woodland	Urban uses
	Pct				
1. Vaiden-Okolona-Sucarnoochee	2.5	Suited: wetness, flooding, poor tilth.	Suited: wetness, flooding.	Poorly suited: restricted use of equipment, seedling mortality.	Poorly suited: flooding, wetness, shrink-swell potential, very slow permeability.
2. Sumter-Sucarnoochee-Faunsdale	1.5	Suited: wetness, flooding, hazard of erosion, poor tilth.	Suited: wetness, flooding.	Poorly suited: restricted use of equipment, seedling mortality.	Poorly suited: flooding, wetness, shrink-swell potential, very slow permeability.
3. Vaiden-Surcarnoochee	1	Suited: wetness, flooding, poor tilth.	Suited: wetness, flooding.	Suited: restricted use of equipment, seedling mortality.	Poorly suited: flooding, wetness, shrink-swell potential, very slow permeability.
4. Cahaba-Urbo-Una	8	Poorly suited: flooding, wetness.	Suited: flooding, wetness.	Suited: restricted use of equipment, seedling mortality.	Not suited: flooding, wetness.
5. Myatt-Columbus-Ochlockonee	2	Suited: wetness, flooding.	Suited: wetness, flooding.	Suited: restricted use of equipment, seedling mortality.	Not suited: flooding, wetness.
6. Kinston-Mantachie-Cahaba	6	Poorly suited: flooding, wetness.	Poorly suited: flooding, wetness.	Suited: restricted use of equipment, seedling mortality.	Not suited: flooding, wetness.
7. Savannah-Bama-Smithdale	10	Well suited	Well suited	Well suited	Well suited.
8. Smithdale-Luverne-Sacul	52	Poorly suited: slope, low fertility, hazard of erosion.	Suited: slope, low fertility.	Suited: restricted use of equipment.	Poorly suited: slope, moderate to slow permeability, shrink-swell potential.
9. Smithdale-Luverne-Savannah	17	Poorly suited: slope, low fertility, hazard of erosion.	Suited: slope, low fertility.	Well suited	Suited: slope, moderate and moderately slow permeability.

Table 5.--Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Acres	Percent
AnA	Annemaine loam, 0 to 2 percent slopes, occasionally flooded	4,490	0.8
BaA	Bama loam, 0 to 2 percent slopes	2,390	0.4
BaB	Bama sandy loam, 2 to 5 percent slopes	18,930	3.3
BgB	Bigbee loamy sand, 0 to 5 percent slopes, occasionally flooded	4,840	0.8
CbA	Cahaba sandy loam, 0 to 2 percent slopes, occasionally flooded	11,030	1.9
CoA	Columbus loam, 0 to 2 percent slopes, occasionally flooded	6,720	1.1
FaA	Faunsdale silty clay, 0 to 1 percent slopes	960	0.2
FaB	Faunsdale silty clay, 1 to 3 percent slopes	900	0.2
FvA	Fluvaquents, ponded	18,970	3.3
KmA	Kinston-Mantachie complex, 0 to 1 percent slopes, frequently flooded	73,260	12.9
LdA	Lucedale loam, 0 to 2 percent slopes	4,800	0.8
LnC	Luverne sandy loam, 5 to 8 percent slopes	26,160	4.6
LsD	Luverne-Smithdale complex, 8 to 15 percent slopes	30,500	5.4
MaA	Myatt fine sandy loam, 0 to 1 percent slopes, occasionally flooded	3,070	0.5
McA	Myatt-Columbus complex, 0 to 2 percent slopes, occasionally flooded	4,760	0.8
OcA	Ochlockonee-Kinston-Iuka complex, 0 to 2 percent slopes, frequently flooded	5,480	1.0
OkA	Okolona silty clay, 0 to 1 percent slopes	2,220	0.4
OkB	Okolona silty clay, 1 to 3 percent slopes	3,300	0.6
Pt	Pits	310	0.1
RvA	Riverview loam, 0 to 2 percent slopes, frequently flooded	3,140	0.6
SaC	Sacul sandy loam, 2 to 8 percent slopes	1,120	0.2
ShA	Savannah loam, 0 to 2 percent slopes	20,270	3.6
ShB	Savannah loam, 2 to 5 percent slopes	25,330	4.4
SmC	Smithdale sandy loam, 5 to 8 percent slopes	51,890	9.1
SnF	Smithdale-Luverne-Sacul complex, 15 to 35 percent slopes	194,590	34.2
SrA	Sucarnoochee silty clay, 0 to 1 percent slopes, frequently flooded	7,000	1.2
SuC2	Sumter silty clay loam, 1 to 5 percent slopes, eroded	4,330	0.8
SuE2	Sumter silty clay loam, 5 to 12 percent slopes, eroded	2,070	0.3
UdC	Udorthents, dredged	2,100	0.4
UrB	Urbo-Mooreville-Una complex, gently undulating, frequently flooded	13,500	2.4
VdA	Vaiden silty clay, 0 to 1 percent slopes	7,850	1.4
VdB	Vaiden silty clay, 1 to 3 percent slopes	4,890	0.8
	Areas of water less than 40 acres in size	2,200	0.4
	Areas of water more than 40 acres in size	6,410	1.1
	Total	569,780	100.0

Table 6.--Land Capability Classes and Yields per Acre of Crops

(Yields are those that can be expected under a high level of management. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil)

Soil name and map symbol	Land capability	Cotton lint	Corn	Soybeans	Grain sorghum	Wheat
		Lbs	Bu	Bu	Bu	Bu
AnA----------------------- Annemaine	IIw	800	100	40	100	40
BaA----------------------- Bama	I	850	110	35	90	40
BaB----------------------- Bama	IIe	750	90	30	80	35
BgB----------------------- Bigbee	IIIs	---	50	15	50	25
CbA----------------------- Cahaba	IIw	800	90	35	90	45
CoA----------------------- Columbus	IIw	800	90	30	90	40
FaA----------------------- Faunsdale	IIIw	700	80	40	80	40
FaB----------------------- Faunsdale	IIIe	650	70	40	80	40
FvA----------------------- Fluvaquents	VIIw	---	---	---	---	---
KmA----------------------- Kinston-Mantachie	Vw	---	---	---	---	---
LdA----------------------- Lucedale	I	900	100	40	100	50
LnC----------------------- Luverne	IVe	600	70	25	65	30
LsD----------------------- Luverne-Smithdale	VIe	---	---	---	---	---
MaA----------------------- Myatt	IVw	---	---	20	---	---
McA-----------------------		---	---	25	---	---
Myatt-	IVw					
Columbus	IIw					
OcA----------------------- Ochlockonee-Kinston-Iuka	Vw	---	---	---	---	---
OkA----------------------- Okolona	IIs	700	80	40	80	45
OkB----------------------- Okolona	IIe	650	80	40	80	45

See footnote at end of table.

Table 6.--Land Capability Classes and Yields per Acre of Crops--Continued

Soil name and map symbol	Land capability	Cotton lint	Corn	Soybeans	Grain sorghum	Wheat
		Lbs	Bu	Bu	Bu	Bu
Pt*. Pits	VIIIs	---	---	---	---	---
RvA. Riverview	IIIw	---	---	30	---	---
SaC. Sacul	IVe	600	70	25	50	20
ShA. Savannah	IIw	700	80	35	85	40
ShB. Savannah	IIe	650	75	35	80	40
SmC. Smithdale	IIIe	600	70	25	60	30
SnF. Smithdale-Luverne-Sacul	VIIe	---	---	---	---	---
SrA. Sucarnoochee	IVw	---	90	35	80	---
SuC2. Sumter	IIIe	---	---	25	60	35
SuE2. Sumter	VIe	---	---	---	---	---
UdC. Udorthents	IVs	---	---	---	---	---
UrB. Urbo-Mooreville-Una	Vw	---	---	---	---	---
VdA. Vaiden	IIIw	500	45	30	80	35
VdB. Vaiden	IIIe	450	40	30	80	35

* See description of the map unit for composition and behavior characteristics of the map unit.

Table 7.--Yields per Acre of Pasture and Hay

(Yields are those that can be expected under a high level of management. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil)

Soil name and map symbol	Improved bermudagrass	Improved bermudagrass hay	Bahiagrass	Tall fescue	Cool season annuals	Grass-clover
	AUM*	Tons	AUM*	AUM*	AUM*	AUM*
AnA------------- Annemaine	8.5	4.5	9.0	7.0	4.5	9.5
BaA------------- Bama	10.0	6.5	9.5	---	5.0	10.0
BaB------------- Bama	9.5	6.0	9.0	---	5.0	9.0
BgB------------- Bigbee	8.0	4.0	7.0	---	4.5	6.0
CbA------------- Cahaba	9.5	6.5	8.5	---	5.0	---
CoA------------- Columbus	9.5	6.5	9.5	---	4.5	8.0
FaA------------- Faunsdale	---	---	---	9.0	---	8.0
FaB------------- Faunsdale	---	---	---	9.0	---	8.0
FvA. Fluvaquents						
KmA------------- Kinston-Mantachie	6.0	---	5.0	---	---	---
LdA------------- Lucedale	10.0	6.5	9.5	---	5.0	---
LnC------------- Luverne	8.0	4.5	8.0	---	4.5	---
LsD------------- Luverne-Smithdale	7.5	4.0	7.0	---	4.0	---
MaA------------- Myatt	7.0	---	7.0	---	---	7.5
McA------------- Myatt-Columbus	7.0	---	7.5	---	---	---
OcA------------- Ochlockonee-Kinston-Iuka	7.0	---	6.0	---	---	---
OkA------------- Okolona	---	---	---	9.5	---	8.5
OkB------------- Okolona	---	---	---	9.5	---	8.5

See footnotes at end of table.

Table 7.--Yields per Acre of Pasture and Hay--Continued

Soil name and map symbol	Improved bermudagrass	Improved bermudagrass hay	Bahiagrass	Tall fescue	Cool season annuals	Grass-clover
	AUM*	Tons	AUM*	AUM*	AUM*	AUM*
Pt**. Pits						
RvA------------- Riverview	8.0	4.5	7.0	---	---	---
SaC------------- Sacul	7.5	4.0	7.5	---	4.5	---
ShA------------- Savannah	9.0	4.5	9.0	---	5.0	10.0
ShB------------- Savannah	9.0	4.5	9.0	---	5.0	9.0
SmC------------- Smithdale	9.5	6.0	8.0	---	5.0	---
SnF------------- Smithdale-Luverne-Sacul	---	---	5.0	---	---	---
SrA------------- Sucarnoochee	---	---	6.0	8.0	---	8.0
SuC2------------ Sumter	---	---	---	7.0	---	7.0
SuE2------------ Sumter	---	---	---	6.0	---	6.0
UdC. Udorthents						
UrB------------- Urbo-Mooreville-Una	---	---	6.0	---	---	5.0
VdA------------- Vaiden	---	---	7.0	8.0	---	8.0
VdB------------- Vaiden	---	---	6.5	8.0	---	8.0

* Animal-unit-month: The amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.

** See description of the map unit for composition and behavior characteristics of the map unit.

Table 8.--Woodland Management and Productivity

(Only the soils suitable for production of commercial trees are listed. Absence of an entry indicates that information was not available)

Soil name and map symbol	Ordination symbol	Management concerns: Erosion hazard	Management concerns: Equipment limitation	Management concerns: Seedling mortality	Management concerns: Plant competition	Potential productivity: Common trees	Potential productivity: Site index	Potential productivity: Volume*	Trees to plant
AnA-------------Annemaine	9W	Slight	Moderate	Slight	Moderate	Loblolly pine-------	90	2.2	Loblolly pine, yellow-poplar, cherrybark oak, sweetgum, American sycamore, water oak.
						Shortleaf pine------	70		
						Water oak-----------	75		
						Yellow-poplar-------	90		
						Sweetgum------------	80		
						Cherrybark oak------	90		
BaA, BaB--------Bama	9A	Slight	Slight	Slight	Moderate	Loblolly pine-------	90	2.2	Loblolly pine, longleaf pine.
						Shortleaf pine------	75		
						Longleaf pine-------	75		
BgB-------------Bigbee	7S	Slight	Moderate	Moderate	Slight	Loblolly pine-------	75	1.6	Loblolly pine, longleaf pine.
CbA-------------Cahaba	10A	Slight	Slight	Slight	Moderate	Loblolly pine-------	95	2.5	Loblolly pine, willow oak, sweetgum, water oak, American sycamore, yellow-poplar.
						Cherrybark oak------	100		
						Shortleaf pine------	70		
						Yellow-poplar-------	100		
						Sweetgum------------	90		
						Water oak-----------	90		
CoA-------------Columbus	10W	Slight	Moderate	Slight	Moderate	Loblolly pine-------	95	2.5	Loblolly pine, sweetgum, yellow-poplar, water oak, American sycamore.
						Sweetgum------------	95		
						Water oak-----------	90		
						Yellow-poplar-------	100		
						Cherrybark oak------	100		
FaA, FaB--------Faunsdale	3C	Slight	Moderate	Moderate	Moderate	Eastern redcedar----	40	*	Eastern redcedar.
						Sugarberry----------	75		
FvA-------------Fluvaquents	5W	Slight	Severe	Severe	Severe	Water oak-----------	80	1.2	Baldcypress, green ash, sweetgum, water oak.
						Baldcypress---------	100		
						Green ash-----------	75		
						Sweetgum------------	80		
KmA**:									
Kinston--------	11W	Slight	Severe	Severe	Severe	Loblolly pine-------	100	2.7	Loblolly pine, sweetgum, green ash, cherrybark oak, eastern cottonwood.
						Sweetgum------------	95		
						Green ash-----------	85		
						Cherrybark oak------	95		
Mantachie------	11W	Slight	Severe	Severe	Severe	Loblolly pine-------	100	2.7	Loblolly pine, eastern cottonwood, cherrybark oak, green ash, sweetgum, yellow-poplar, water oak.
						Water oak-----------	90		
						Cherrybark oak------	100		
						Green ash-----------	85		
						Sweetgum------------	95		
						Yellow-poplar-------	95		

See footnotes at end of table.

Table 8.--Woodland Management and Productivity--Continued

Soil name and map symbol	Ordi-nation symbol	Management concerns: Erosion hazard	Management concerns: Equip-ment limita-tion	Management concerns: Seedling mortal-ity	Management concerns: Plant competi-tion	Potential productivity: Common trees	Potential productivity: Site index	Potential productivity: Volume*	Trees to plant
LdA------------- Lucedale	9A	Slight	Slight	Slight	Moderate	Loblolly pine-------	90	2.2	Loblolly pine.
						Longleaf pine-------	75		
						Shortleaf pine------	80		
LnC------------- Luverne	9C	Slight	Moderate	Moderate	Moderate	Loblolly pine-------	90	2.2	Loblolly pine.
						Shortleaf pine------	80		
						Longleaf pine-------	70		
LsD**:									
Luverne--------	9C	Moderate	Moderate	Moderate	Moderate	Loblolly pine-------	90	2.2	Loblolly pine.
						Shortleaf pine------	80		
						Longleaf pine-------	70		
Smithdale------	9A	Moderate	Slight	Slight	Moderate	Loblolly pine-------	90	2.2	Loblolly pine, longleaf pine.
						Longleaf pine-------	70		
						Shortleaf pine------	75		
MaA------------- Myatt	9W	Slight	Severe	Severe	Severe	Loblolly pine-------	90	2.2	Loblolly pine, water oak, sweetgum, cherrybark oak.
						Cherrybark oak------	80		
						Sweetgum------------	90		
						Water oak-----------	80		
						Willow oak----------	80		
McA**:									
Myatt----------	9W	Slight	Severe	Severe	Severe	Loblolly pine-------	90	2.2	Loblolly pine, water oak, sweetgum, cherrybark oak.
						Cherrybark oak------	80		
						Sweetgum------------	90		
						Water oak-----------	80		
						Willow oak----------	80		
Columbus-------	10W	Slight	Moderate	Slight	Moderate	Loblolly pine-------	95	2.5	Loblolly pine, sweetgum, yellow-poplar, water oak.
						Sweetgum------------	95		
						Water oak-----------	90		
						Yellow-poplar-------	100		
						Cherrybark oak------	100		
OcA**:									
Ochlockonee----	11W	Slight	Moderate	Moderate	Moderate	Loblolly pine-------	100	2.7	Loblolly pine, yellow-poplar, sweetgum.
						Sweetgum------------	95		
						American sycamore---	100		
						Water oak-----------	90		
Kinston--------	11W	Slight	Severe	Severe	Severe	Loblolly pine-------	100	2.7	Loblolly pine, sweetgum, green ash, eastern cottonwood, cherrybark oak.
						Sweetgum------------	95		
						Green ash-----------	85		
						Cherrybark oak------	95		
Iuka-----------	11W	Slight	Moderate	Moderate	Severe	Loblolly pine-------	100	2.7	Loblolly pine, eastern cottonwood, yellow-poplar.
						Sweetgum------------	100		
						Eastern cottonwood--	105		
						Water oak-----------	100		
						American sycamore---	100		
OkA, OkB-------- Okolona	3C	Slight	Moderate	Moderate	Moderate	Eastern redcedar----	40	*	Eastern redcedar.

See footnotes at end of table.

Table 8.--Woodland Management and Productivity--Continued

Soil name and map symbol	Ordination symbol	Management concerns: Erosion hazard	Management concerns: Equipment limitation	Management concerns: Seedling mortality	Management concerns: Plant competition	Potential productivity: Common trees	Potential productivity: Site index	Potential productivity: Volume*	Trees to plant
RvA------------- Riverview	11A	Slight	Slight	Slight	Severe	Loblolly pine-------	100	2.7	Loblolly pine, yellow-poplar, sweetgum, water oak, eastern cottonwood, American sycamore.
						Yellow-poplar-------	100		
						Sweetgum------------	100		
						Water oak-----------	90		
SaC------------- Sacul	9C	Slight	Moderate	Slight	Moderate	Loblolly pine-------	90	2.2	Loblolly pine.
						Shortleaf pine------	80		
ShA, ShB-------- Savannah	8W	Slight	Moderate	Slight	Moderate	Loblolly pine-------	85	2.1	Loblolly pine, sweetgum.
						Longleaf pine-------	75		
						Sweetgum------------	85		
SmC------------- Smithdale	9A	Slight	Slight	Slight	Moderate	Loblolly pine-------	90	2.2	Loblolly pine, longleaf pine.
						Longleaf pine-------	70		
						Shortleaf pine------	75		
SnF**:									
Smithdale------	9R	Severe	Severe	Slight	Moderate	Loblolly pine-------	90	2.2	Loblolly pine, longleaf pine.
						Longleaf pine-------	70		
						Shortleaf pine------	75		
Luverne--------	9R	Severe	Severe	Slight	Moderate	Loblolly pine-------	90	2.2	Loblolly pine.
						Shortleaf pine------	80		
						Longleaf pine-------	70		
Sacul----------	9R	Severe	Severe	Slight	Moderate	Loblolly pine-------	90	2.2	Loblolly pine.
						Shortleaf pine------	80		
SrA------------- Sucarnoochee	6W	Slight	Severe	Severe	Severe	Water oak-----------	90	1.0	Eastern cottonwood, American sycamore, green ash, sweetgum.
						American sycamore---	100		
						Eastern cottonwood--	95		
						Sweetgum------------	100		
						Green ash-----------	85		
SuC2, SuE2------ Sumter	3C	Slight	Moderate	Moderate	Moderate	Eastern redcedar----	40	*	Eastern redcedar.
UdC------------- Udorthents	7S	Slight	Moderate	Moderate	Slight	Loblolly pine-------	75	1.6	Loblolly pine, green ash, eastern cottonwood.
						Eastern cottonwood--	90		
						American sycamore---	90		
						Green ash-----------	90		

See footnotes at end of table.

Table 8.--Woodland Management and Productivity--Continued

Soil name and map symbol	Ordination symbol	Management concerns: Erosion hazard	Equipment limitation	Seedling mortality	Plant competition	Potential productivity: Common trees	Site index	Volume*	Trees to plant
UrB**:									
Urbo	10W	Slight	Severe	Severe	Severe	Loblolly pine	95	2.5	Loblolly pine, American sycamore, sweetgum, green ash.
						Green ash	85		
						Cherrybark oak	95		
						Sweetgum	95		
						Water oak	90		
						American sycamore	90		
Mooreville	12W	Slight	Moderate	Severe	Severe	Loblolly pine	100	2.7	Loblolly pine, cherrybark oak, green ash, water oak, sweetgum, yellow-poplar.
						Cherrybark oak	100		
						Green ash	85		
						Water oak	100		
						Sweetgum	105		
						Yellow-poplar	100		
Una	7W	Slight	Severe	Severe	Severe	Water tupelo	70	0.5	Water tupelo, baldcypress, swamp tupelo.
						Baldcypress	80		
VdA, VdB: Vaiden	8C	Slight	Moderate	Severe	Severe	Loblolly pine	85	2.1	Loblolly pine, sweetgum, water oak.
						Shortleaf pine	65		
						Sweetgum	80		
						Water oak	80		

* Volume is expressed as the average yearly growth in cords per acre per year calculated at the age of 25 years for fully stocked, unmanaged stands of loblolly pine and at the age of 30 years for fully stocked, unmanaged stands of oak and gum. Volume for eastern redcedar is 140 board feet per acre per year calculated at the age of 40 years for fully stocked, natural stands.

** See description of the map unit for composition and behavior characteristics of the map unit.

Table 9.--Recreational Development

(Some terms that describe restrictive soil features are defined in the "Glossary." See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not rated)

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
AnA: Annemaine	Severe: flooding.	Moderate: wetness, percs slowly.	Moderate: wetness, flooding.	Moderate: wetness.	Moderate: wetness, flooding.
BaA: Bama	Slight	Slight	Slight	Slight	Slight.
BaB: Bama	Slight	Moderate slope.	Slight	Slight	Slight.
BgB: Bigbee	Severe: flooding.	Moderate: too sandy.	Moderate: too sandy, flooding.	Moderate: too sandy.	Moderate: droughty, flooding.
CbA: Cahaba	Severe: flooding.	Slight	Moderate: flooding.	Slight	Moderate: flooding.
CoA: Columbus	Severe: flooding.	Moderate: wetness.	Moderate: wetness, flooding.	Slight	Moderate: flooding.
FaA, FaB: Faunsdale	Severe: percs slowly, too clayey.	Severe: too clayey, percs slowly.	Severe: too clayey, percs slowly.	Severe: too clayey, erodes easily.	Severe: too clayey.
FvA: Fluvaquents	Severe: flooding, ponding.	Severe: ponding.	Severe: ponding, flooding.	Severe: ponding.	Severe: ponding, flooding.
KmA*:					
Kinston	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness, flooding.
Mantachie	Severe: flooding, wetness.	Moderate: flooding, wetness.	Severe: wetness, flooding.	Moderate: wetness, flooding.	Severe: flooding.
LdA: Lucedale	Slight	Slight	Slight	Slight	Slight.
LnC: Luverne	Moderate: percs slowly.	Moderate: percs slowly.	Severe: slope.	Slight	Slight.
LsD*:					
Luverne	Moderate: slope, percs slowly.	Moderate: slope, percs slowly.	Severe: slope.	Slight	Moderate: slope.
Smithdale	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight	Moderate: slope.
MaA: Myatt	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.

See footnote at end of table.

Table 9.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
McA*:					
Myatt	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
Columbus	Severe: flooding.	Moderate: wetness.	Moderate: wetness, flooding.	Slight	Moderate: flooding.
OcA*:					
Ochlockonee	Severe: flooding.	Moderate: flooding.	Severe: flooding.	Moderate: flooding.	Severe: flooding.
Kinston	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness, flooding.
Iuka	Severe: flooding, wetness.	Moderate: flooding, wetness.	Severe: wetness, flooding.	Moderate: wetness, flooding.	Severe: flooding.
OkA, OkB Okolona	Severe: percs slowly, too clayey.	Severe: too clayey, percs slowly.	Severe: too clayey, percs slowly.	Severe: too clayey.	Severe: too clayey.
Pt* Pits	Variable	Variable	Variable	Variable	Variable.
RvA Riverview	Severe: flooding.	Moderate: flooding.	Severe: flooding.	Moderate: flooding.	Severe: flooding.
SaC Sacul	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Moderate: slope, wetness.	Slight	Slight.
ShA Savannah	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Severe: erodes easily.	Moderate: wetness.
ShB Savannah	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Moderate: slope, wetness, percs slowly.	Severe: erodes easily.	Moderate: wetness.
SmC Smithdale	Slight	Slight	Severe: slope.	Slight	Slight.
SnF*:					
Smithdale	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Luverne	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Sacul	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.

See footnote at end of table.

Table 9.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
SrA------------------- Sucarnoochee	Severe: flooding, wetness, percs slowly.	Severe: wetness, too clayey, percs slowly.	Severe: too clayey, wetness, flooding.	Severe: wetness, too clayey.	Severe: wetness, flooding, too clayey.
SuC2------------------ Sumter	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: slope, percs slowly.	Severe erodes easily.	Moderate: depth to rock.
SuE2------------------ Sumter	Moderate: slope, percs slowly.	Moderate: slope, percs slowly.	Severe: slope.	Severe: erodes easily.	Moderate: slope, depth to rock.
UdC------------------- Udorthents	Moderate: flooding.	Moderate: percs slowly.	Moderate: slope, flooding, percs slowly.	Slight----------	Moderate: flooding.
UrB*:					
Urbo-----------------	Severe: flooding, wetness, percs slowly.	Severe: percs slowly.	Severe: wetness, flooding.	Moderate: wetness, flooding.	Severe: flooding.
Mooreville-----------	Severe: flooding.	Moderate: flooding, wetness.	Severe: flooding.	Moderate: wetness, flooding.	Severe: flooding.
Una------------------	Severe: flooding, ponding, percs slowly.	Severe: ponding, percs slowly.	Severe: ponding, flooding.	Severe: ponding.	Severe: ponding, flooding.
VdA, VdB-------------- Vaiden	Severe: wetness, percs slowly.	Severe: too clayey, percs slowly.	Severe: too clayey, wetness.	Severe: too clayey.	Severe: too clayey.

* See description of the map unit for composition and behavior characteristics of the map unit.

Table 10.--Wildlife Habitat

(See text for definitions of "good," "fair," "poor," and "very poor." Absence of an entry indicates that the soil was not rated)

Soil name and map symbol	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
AnA: Annemaine	Good	Good	Good	Good	Good	Good	Good	Good	Good	Poor.
BaA, BaB: Bama	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
BgB: Bigbee	Poor	Fair	Fair	Poor	Fair	Very poor.	Very poor.	Fair	Poor	Very poor.
CbA: Cahaba	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
CoA: Columbus	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
FaA, FaB: Faunsdale	Fair	Fair	Fair	Fair	Fair	Poor	Very poor.	Fair	Fair	Very poor.
FvA: Fluvaquents	Very poor.	Poor	Poor	Very poor.	Very poor.	Good	Good	Poor	Poor	Good.
KmA*:										
Kinston	Very poor.	Poor	Poor	Poor	Poor	Good	Fair	Poor	Poor	Fair.
Mantachie	Poor	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair.
LdA: Lucedale	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
LnC: Luverne	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
LsD*:										
Luverne	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Smithdale	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
MaA: Myatt	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
McA*:										
Myatt	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
Columbus	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
OcA*:										
Ochlockonee	Poor	Fair	Fair	Good	Good	Poor	Very poor.	Fair	Good	Very poor.
Kinston	Very poor.	Poor	Poor	Poor	Poor	Good	Fair	Poor	Poor	Fair.

See footnote at end of table.

Table 10.--Wildlife Habitat--Continued

Soil name and map symbol	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
OcA*:										
Iuka	Poor	Fair	Fair	Good	Good	Poor	Poor	Fair	Good	Poor.
OkA, OkB: Okolona	Good	Good	Fair	Poor	Fair	Poor	Very poor.	Good	Good	Very poor.
Pt*: Pits	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.
RvA: Riverview	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
SaC: Sacul	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
ShA, ShB: Savannah	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
SmC: Smithdale	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
SnF*:										
Smithdale	Very poor.	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Luverne	Very poor.	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Sacul	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
SrA: Sucarnoochee	Poor	Fair	Poor	Good	Poor	Fair	Fair	Poor	Fair	Fair.
SuC2: Sumter	Fair	Fair	Fair	Fair	Fair	Poor	Very poor.	Fair	Fair	Very poor.
SuE2: Sumter	Fair	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
UdC: Udorthents	Fair	Good	Good	Good	Fair	Poor	Poor	Good	Good	Fair.
UrB*:										
Urbo	Poor	Fair	Fair	Good	Good	Fair	Fair	Fair	Fair	Fair.
Mooreville	Poor	Fair	Fair	Good	Good	Poor	Poor	Fair	Good	Poor.
Una	Poor	Very poor.	Very poor.	Poor	Poor	Good	Good	Very poor.	Very poor.	Good.
VdA: Vaiden	Fair	Fair	Fair	Good	Good	Poor	Fair	Fair	Good	Poor.
VdB: Vaiden	Fair	Fair	Fair	Good	Good	Poor	Poor	Fair	Good	Poor.

* See description of the map unit for composition and behavior characteristics of the map unit.

Table 11.--Building Site Development

(Some terms that describe restrictive soil features are defined in the "Glossary." See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
AnA: Annemaine	Severe: wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Severe: low strength, flooding.	Moderate: wetness, flooding.
BaA, BaB: Bama	Slight	Slight	Slight	Slight	Slight	Slight.
BgB: Bigbee	Severe: cutbanks cave.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: droughty, flooding.
CbA: Cahaba	Severe: cutbanks cave.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: flooding.
CoA: Columbus	Severe: cutbanks cave, wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Severe: flooding.	Moderate: flooding.
FaA, FaB: Faunsdale	Severe: cutbanks cave.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: low strength, shrink-swell.	Severe: too clayey.
FvA: Fluvaquents	Severe: ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: low strength, ponding, flooding.	Severe: ponding, flooding.
KmA*:						
Kinston	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, wetness, flooding.	Severe: wetness, flooding.
Mantachie	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding.	Severe: flooding.
LdA: Lucedale	Slight	Slight	Slight	Slight	Slight	Slight.
LnC: Luverne	Moderate: too clayey.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Severe: low strength.	Slight.
LsD*:						
Luverne	Moderate: too clayey, slope.	Moderate: shrink-swell, slope.	Moderate: slope, shrink-swell.	Severe: slope.	Severe: low strength.	Moderate: slope.
Smithdale	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: slope.

See footnote at end of table.

Table 11.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
MaA----------------Myatt	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: wetness.
McA*:						
Myatt--------------	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: wetness.
Columbus-----------	Severe: cutbanks cave, wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Severe: flooding.	Moderate: flooding.
OcA*:						
Ochlockonee--------	Moderate: wetness.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.
Kinston------------	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, wetness, flooding.	Severe: wetness, flooding.
Iuka---------------	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding.	Severe: flooding.
OkA, OkB-----------Okolona	Severe: cutbanks cave.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: low strength, shrink-swell.	Severe: too clayey.
Pt*----------------Pits	Variable---------	Variable---------	Variable---------	Variable---------	Variable---------	Variable.
RvA----------------Riverview	Severe: cutbanks cave.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.
SaC----------------Sacul	Severe: wetness.	Severe: shrink-swell.	Severe: wetness, shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Slight.
ShA, ShB-----------Savannah	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: low strength, wetness.	Moderate: wetness.
SmC----------------Smithdale	Slight----------	Slight----------	Slight----------	Moderate: slope.	Slight----------	Slight.
SnF*:						
Smithdale----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Luverne------------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope.	Severe: slope.
Sacul--------------	Severe: wetness, slope.	Severe: shrink-swell, slope.	Severe: wetness, slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength, slope.	Severe: slope.

See footnote at end of table.

Table 11.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
SrA: Sucarnoochee	Severe: wetness.	Severe: flooding, wetness, shrink-swell.	Severe: flooding, wetness, shrink-swell.	Severe: flooding, wetness, shrink-swell.	Severe: low strength, wetness, flooding.	Severe: wetness, flooding, too clayey.
SuC2: Sumter	Moderate: depth to rock, too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Moderate: depth to rock.
SuE2: Sumter	Moderate: depth to rock, too clayey, slope.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength.	Moderate: slope, depth to rock.
UdC: Udorthents	Severe: cutbanks cave.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: flooding.
UrB*:						
Urbo	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, flooding.	Severe: flooding.
Mooreville	Severe: wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Severe: low strength, flooding.	Severe: flooding.
Una	Severe: ponding.	Severe: flooding, ponding, shrink-swell.	Severe: flooding, ponding, shrink-swell.	Severe: flooding, ponding, shrink-swell.	Severe: shrink-swell, low strength, ponding.	Severe: ponding, flooding.
VdA, VdB: Vaiden	Severe: wetness.	Severe: wetness, shrink-swell.	Severe: wetness, shrink-swell.	Severe: wetness, shrink-swell.	Severe: shrink-swell, low strength.	Severe: too clayey.

* See description of the map unit for composition and behavior characteristics of the map unit.

Table 12.--Sanitary Facilities

(Some terms that describe restrictive soil features are defined in the "Glossary." See text for definitions of "slight," "good," and other terms. Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
AnA----------------- Annemaine	Severe: flooding, wetness, percs slowly.	Severe: flooding, wetness.	Severe: flooding, wetness, too clayey.	Severe: flooding, wetness.	Poor: too clayey, hard to pack.
BaA----------------- Bama	Slight-----------	Moderate: seepage.	Slight-----------	Slight-----------	Good.
BaB----------------- Bama	Slight-----------	Moderate: seepage, slope.	Slight-----------	Slight-----------	Good.
BgB----------------- Bigbee	Severe: flooding, wetness, poor filter.	Severe: seepage, flooding.	Severe: flooding, seepage, wetness.	Severe: flooding, seepage.	Poor: seepage, too sandy.
CbA----------------- Cahaba	Severe: flooding.	Severe: seepage, flooding.	Severe: flooding, seepage.	Severe: flooding.	Fair: thin layer.
CoA----------------- Columbus	Severe: flooding, wetness.	Severe: seepage, flooding, wetness.	Severe: flooding, seepage, wetness.	Severe: flooding, wetness.	Fair: too clayey, wetness, thin layer.
FaA----------------- Faunsdale	Severe: percs slowly.	Moderate: wetness.	Severe: wetness, too clayey.	Moderate: wetness.	Poor: too clayey, hard to pack.
FaB----------------- Faunsdale	Severe: percs slowly.	Moderate: slope, wetness.	Severe: wetness, too clayey.	Moderate: wetness.	Poor: too clayey, hard to pack.
FvA----------------- Fluvaquents	Severe: flooding, ponding, percs slowly.	Severe: flooding, ponding.	Severe: flooding, ponding, too clayey.	Severe: flooding, ponding.	Poor: too clayey, ponding.
KmA*:					
Kinston------------	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
Mantachie----------	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
LdA----------------- Lucedale	Slight-----------	Moderate: seepage.	Slight:	Slight-----------	Good.
LnC----------------- Luverne	Severe: percs slowly.	Moderate: slope.	Severe: too clayey.	Slight-----------	Poor: too clayey, hard to pack.

See footnote at end of table.

Table 12.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
LsD*:					
Luverne	Severe: percs slowly.	Severe: slope.	Severe: too clayey.	Moderate: slope.	Poor: too clayey, hard to pack.
Smithdale	Moderate: slope.	Severe: seepage, slope.	Severe: seepage.	Severe: seepage.	Fair: slope.
MaA Myatt	Severe: flooding, wetness, percs slowly.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
McA*:					
Myatt	Severe: flooding, wetness, percs slowly.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
Columbus	Severe: flooding, wetness.	Severe: seepage, flooding, wetness.	Severe: flooding, seepage, wetness.	Severe: flooding, wetness.	Fair: too clayey, wetness, thin layer.
OcA*:					
Ochlockonee	Severe: flooding, wetness.	Severe: seepage, flooding, wetness.	Severe: flooding, seepage, wetness.	Severe: flooding, wetness.	Fair: thin layer.
Kinston	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
Iuka	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Fair: wetness, thin layer.
OkA Okolona	Severe: percs slowly.	Slight	Severe: wetness, too clayey.	Moderate: wetness.	Poor: too clayey, hard to pack.
OkB Okolona	Severe: percs slowly.	Moderate: slope.	Severe: wetness, too clayey.	Moderate: wetness.	Poor: too clayey, hard to pack.
Pt* Pits	Variable	Variable	Variable	Variable	Variable.
RvA Riverview	Severe: flooding, wetness.	Severe: seepage, flooding, wetness.	Severe: flooding, seepage, wetness.	Severe: flooding, seepage, wetness.	Fair: thin layer.
SaC Sacul	Severe: wetness, percs slowly.	Moderate: slope.	Severe: too clayey.	Moderate: wetness.	Poor: too clayey, hard to pack.

See footnote at end of table.

Table 12.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
ShA, ShB: Savannah	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Moderate: wetness.	Fair: wetness.
SmC: Smithdale	Slight	Severe: seepage.	Severe: seepage.	Severe: seepage.	Good.
SnF*:					
Smithdale	Severe: slope.	Severe: seepage, slope.	Severe: seepage, slope.	Severe: seepage, slope.	Poor: slope.
Luverne	Severe: percs slowly, slope.	Severe: slope.	Severe: slope, too clayey.	Severe: slope.	Poor: too clayey, hard to pack, slope.
Sacul	Severe: wetness, percs slowly, slope.	Severe: slope.	Severe: slope, too clayey.	Severe: slope.	Poor: too clayey, hard to pack, slope.
SrA: Sucarnoochee	Severe: flooding, wetness, percs slowly.	Severe: flooding, wetness.	Severe: flooding, wetness, too clayey.	Severe: flooding, wetness.	Poor: too clayey, hard to pack, wetness.
SuC2: Sumter	Severe: depth to rock, percs slowly.	Severe: depth to rock.	Severe: depth to rock, too clayey.	Severe: depth to rock.	Poor: depth to rock, too clayey, hard to pack.
SuE2: Sumter	Severe: depth to rock, percs slowly.	Severe: depth to rock, slope.	Severe: depth to rock, too clayey.	Severe: depth to rock.	Poor: depth to rock, too clayey, hard to pack.
UdC: Udorthents	Severe: flooding, poor filter.	Severe: flooding, seepage.	Severe: flooding, wetness, seepage.	Severe: flooding, seepage.	Poor. seepage, too sandy.
UrB*:					
Urbo	Severe: flooding, wetness, percs slowly.	Severe: flooding.	Severe: flooding, wetness, too clayey.	Severe: flooding, wetness.	Poor: too clayey, hard to pack, wetness.
Mooreville	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Fair: too clayey, wetness.
Una	Severe: flooding, ponding, percs slowly.	Severe: flooding, ponding.	Severe: flooding, ponding, too clayey.	Severe: flooding, ponding.	Poor: too clayey, hard to pack, ponding.
VdA: Vaiden	Severe: wetness, percs slowly.	Slight	Severe: wetness, too clayey.	Severe: wetness.	Poor: too clayey, hard to pack.

See footnote at end of table.

Table 12.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
VdB------------------ Vaiden	Severe: wetness, percs slowly.	Moderate: slope.	Severe: wetness, too clayey.	Severe: wetness.	Poor: too clayey, hard to pack.

* See description of the map unit for composition and behavior characteristics of the map unit.

Table 13.--Construction Materials

(Some terms that describe restrictive soil features are defined in the "Glossary." See text for definitions of "good," "fair," and other terms. Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
AnA: Annemaine	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
BaA, BaB: Bama	Good	Improbable: excess fines.	Improbable: excess fines.	Good.
BgB: Bigbee	Good	Probable	Improbable: too sandy.	Poor: too sandy.
CbA: Cahaba	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
CoA: Columbus	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
FaA, FaB: Faunsdale	Poor: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
FvA: Fluvaquents	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
KmA*:				
Kinston	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
Mantachie	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
LdA: Lucedale	Good	Improbable: excess fines.	Improbable: excess fines.	Good.
LnC: Luverne	Good	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
LsD*:				
Luverne	Good	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
Smithdale	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: slope.
MaA: Myatt	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
McA*:				
Myatt	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
Columbus	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.

See footnote at end of table.

Table 13.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
OcA*:				
Ochlockonee	Good	Improbable: excess fines.	Improbable: excess fines.	Good.
Kinston	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
Iuka	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Good.
OkA, OkB: Okolona	Poor: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
Pt*: Pits	Variable	Variable	Variable	Variable.
RvA: Riverview	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, thin layer.
SaC: Sacul	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
ShA, ShB: Savannah	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
SmC: Smithdale	Good	Improbable: excess fines.	Improbable: excess fines.	Good.
SnF*:				
Smithdale	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Luverne	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, slope.
Sacul	Poor: low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, slope.
SrA: Sucarnoochee	Poor: low strength, wetness, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
SuC2, SuE2: Sumter	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
UdC: Udorthents	Good	Improbable: excess fines.	Improbable: excess fines.	Poor: too sandy.

See footnote at end of table.

Table 13.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
UrB*:				
Urbo------------------	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
Mooreville-----------	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
Una-------------------	Poor: low strength, wetness, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
VdA, VdB-------------- Vaiden	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.

* See description of the map unit for composition and behavior characteristics of the map unit.

Table 14.--Water Management

(Some terms that describe restrictive soil features are defined in the "Glossary." See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not evaluated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Soil name and map symbol	Limitations for--		Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Drainage	Irrigation	Terraces and diversions	Grassed waterways
AnA---------------Annemaine	Moderate: seepage.	Severe: hard to pack, wetness.	Percs slowly, flooding.	Wetness, percs slowly.	Wetness, percs slowly.	Percs slowly.
BaA---------------Bama	Moderate: seepage.	Moderate: piping.	Deep to water	Favorable------	Favorable------	Favorable.
BaB---------------Bama	Moderate: seepage, slope.	Moderate: piping.	Deep to water	Favorable------	Favorable------	Favorable.
BgB---------------Bigbee	Severe: seepage.	Severe: seepage, piping.	Deep to water	Droughty, fast intake.	Too sandy------	Droughty.
CbA---------------Cahaba	Severe: seepage.	Moderate: thin layer, piping.	Deep to water	Favorable------	Favorable------	Favorable.
CoA---------------Columbus	Severe: seepage.	Moderate: thin layer, piping, wetness.	Flooding-------	Wetness, erodes easily, flooding.	Erodes easily, wetness.	Favorable.
FaA, FaB----------Faunsdale	Slight---------	Severe: hard to pack.	Deep to water	Slow intake, percs slowly.	Erodes easily, percs slowly.	Erodes easily, percs slowly.
FvA---------------Fluvaquents	Slight---------	Severe: piping, ponding.	Ponding, percs slowly, flooding.	Ponding, percs slowly, flooding.	Erodes easily, ponding, percs slowly.	Wetness, erodes easily, percs slowly.
KmA*:						
Kinston----------	Moderate: seepage.	Severe: wetness.	Flooding-------	Wetness, flooding.	Wetness--------	Wetness.
Mantachie--------	Moderate: seepage.	Severe: piping, wetness.	Flooding-------	Wetness, flooding.	Wetness--------	Wetness.
LdA---------------Lucedale	Moderate: seepage.	Severe: piping.	Deep to water	Favorable------	Favorable------	Favorable.
LnC---------------Luverne	Moderate: slope.	Severe: piping, hard to pack.	Deep to water	Slope----------	Favorable------	Favorable.
LsD*:						
Luverne----------	Severe: slope.	Severe: piping, hard to pack.	Deep to water	Slope----------	Slope----------	Slope.
Smithdale--------	Severe: seepage, slope.	Severe: piping.	Deep to water	Slope----------	Slope----------	Slope.

See footnote at end of table.

Table 14.--Water Management--Continued

Soil name and map symbol	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
MaA--------------- Myatt	Moderate: seepage.	Severe: piping, wetness.	Flooding-------	Wetness, flooding.	Wetness--------	Wetness.
McA*:						
Myatt------------	Moderate: seepage.	Severe: piping, wetness.	Flooding-------	Wetness, flooding.	Wetness--------	Wetness.
Columbus---------	Severe: seepage.	Moderate: thin layer, piping, wetness.	Flooding-------	Wetness, erodes easily, flooding.	Erodes easily, wetness.	Favorable.
OcA*:						
Ochlockonee------	Severe: seepage.	Severe: piping.	Deep to water	Flooding-------	Favorable------	Favorable.
Kinston----------	Moderate: seepage.	Severe: wetness.	Flooding-------	Wetness, flooding.	Wetness--------	Wetness.
Iuka-------------	Moderate: seepage.	Severe: piping, wetness.	Flooding-------	Wetness, flooding.	Erodes easily, wetness.	Erodes easily, wetness.
OkA, OkB---------- Okolona	Slight---------	Severe: hard to pack.	Deep to water	Slow intake, percs slowly.	Erodes easily, percs slowly.	Erodes easily, percs slowly.
Pt*--------------- Pits	Variable-------	Variable-------	Variable-------	Variable-------	Variable-------	Variable.
RvA--------------- Riverview	Severe: seepage.	Severe: piping.	Deep to water	Flooding-------	Favorable------	Favorable.
SaC--------------- Sacul	Moderate: slope.	Moderate: hard to pack, wetness.	Percs slowly, slope.	Slope, wetness.	Wetness, soil blowing.	Percs slowly.
ShA--------------- Savannah	Moderate: seepage.	Severe: piping.	Favorable------	Wetness--------	Erodes easily, wetness.	Erodes easily, rooting depth.
ShB--------------- Savannah	Moderate: seepage, slope.	Severe: piping.	Slope----------	Slope, wetness.	Erodes easily, wetness.	Erodes easily, rooting depth.
SmC--------------- Smithdale	Severe: seepage.	Severe: piping.	Deep to water	Slope----------	Favorable------	Favorable.
SnF*:						
Smithdale--------	Severe: seepage, slope.	Severe: piping.	Deep to water	Slope----------	Slope----------	Slope.
Luverne----------	Severe: slope.	Severe: piping, hard to pack.	Deep to water	Slope----------	Slope----------	Slope.
Sacul------------	Severe: slope.	Moderate: hard to pack, wetness.	Percs slowly, slope.	Slope, wetness.	Slope, wetness, soil blowing.	Slope, percs slowly.

See footnote at end of table.

Table 14.--Water Management--Continued

Soil name and map symbol	Limitations for-- Pond reservoir areas	Limitations for-- Embankments, dikes, and levees	Features affecting-- Drainage	Features affecting-- Irrigation	Features affecting-- Terraces and diversions	Features affecting-- Grassed waterways
SrA: Sucarnoochee	Slight	Severe: hard to pack, wetness.	Percs slowly, flooding.	Wetness, slow intake, percs slowly.	Wetness, percs slowly.	Wetness, percs slowly.
SuC2: Sumter	Moderate: seepage, depth to rock, slope.	Severe: thin layer.	Deep to water	Slope, percs slowly.	Depth to rock, erodes easily.	Erodes easily, depth to rock.
SuE2: Sumter	Severe: slope.	Severe: thin layer.	Deep to water	Slope, percs slowly.	Slope, depth to rock, erodes easily.	Slope, erodes easily, depth to rock.
UdC: Udorthents	Moderate: slope.	Severe: piping.	Deep to water	Droughty, fast intake.	Too sandy.	Droughty.
UrB*:						
Urbo	Slight	Severe: wetness.	Percs slowly, flooding.	Wetness, percs slowly.	Erodes easily, wetness, percs slowly.	Wetness, erodes easily, percs slowly.
Mooreville	Moderate: seepage.	Severe: wetness.	Flooding	Wetness, erodes easily, flooding.	Erodes easily, wetness.	Favorable.
Una	Slight	Severe: ponding.	Ponding, percs slowly, flooding.	Ponding, percs slowly.	Ponding, percs slowly.	Wetness, percs slowly.
VdA, VdB: Vaiden	Slight	Severe: hard to pack.	Percs slowly	Wetness, slow intake.	Wetness, percs slowly.	Wetness, percs slowly.

* See description of the map unit for composition and behavior characteristics of the map unit.

Table 15.--Engineering Index Properties

(The symbol < means less than; > means more than. Absence of an entry indicates that data were not estimated)

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In								Pct	
AnA: Annemaine	0-8	Loam	SM, SC-SM, ML, CL-ML	A-4	95-100	95-100	70-95	40-75	<20	NP-5
	8-22	Clay, clay loam, silty clay.	CL	A-6, A-7	95-100	95-100	85-100	70-98	30-50	10-25
	22-31	Clay, silty clay, silty clay loam.	CH, MH, CL, ML	A-7	95-100	95-100	90-100	80-99	45-70	20-35
	31-44	Sandy clay loam, loam, clay loam.	SC, CL	A-4, A-6	95-100	95-100	80-100	36-80	20-35	8-15
	44-65	Sandy clay loam, sandy loam, loamy sand.	SM, SC-SM, SC	A-2, A-4	95-100	95-100	60-90	30-50	<20	NP-10
BaA: Bama	0-5	Loam	SM, SC, SC-SM, CL	A-4, A-6	95-100	85-100	70-99	40-70	<30	NP-14
	5-43	Loam, sandy clay loam.	SM, SC, SC-SM, CL-ML	A-4, A-6	90-100	85-100	80-95	36-70	15-35	2-15
	43-65	Loam, sandy clay loam, clay loam.	SC, CL	A-4, A-6	85-100	80-100	80-95	40-70	20-40	8-18
BaB: Bama	0-6	Sandy loam	SM, SC, SC-SM, CL	A-4, A-6	95-100	85-100	70-99	40-70	<30	NP-14
	6-29	Loam, sandy clay loam.	SM, SC, SC-SM, CL-ML	A-4, A-6	90-100	85-100	80-95	36-70	15-35	2-15
	29-65	Loam, sandy clay	SC, CL	A-4, A-6	85-100	80-100	80-95	40-70	20-40	8-18
BgB: Bigbee	0-6	Loamy sand	SM	A-2-4	100	95-100	60-90	15-30	<20	NP
	6-88	Sand, fine sand	SP-SM, SM	A-2-4, A-3	85-100	85-100	50-75	5-20	<20	NP
CbA: Cahaba	0-10	Sandy loam	SM	A-4, A-2-4	95-100	95-100	65-90	30-45	<20	NP
	10-38	Sandy clay loam, loam, clay loam.	SC, CL	A-4, A-6	90-100	80-100	75-90	40-75	22-35	8-15
	38-65	Sand, loamy sand, sandy loam.	SM, SP-SM	A-2-4	95-100	90-100	60-85	10-35	<20	NP
CoA: Columbus	0-11	Loam	ML, CL-ML, CL	A-4	100	100	90-100	70-90	<30	3-10
	11-44	Clay loam, loam, sandy clay loam.	CL, SC	A-4, A-6	100	90-100	80-95	40-80	22-35	8-15
	44-65	Sandy loam, loamy sand, sand.	SM, SP-SM	A-2, A-4	100	90-100	50-85	10-45	<20	NP-4
FaA, FaB: Faunsdale	0-9	Silty clay	CH	A-7	98-100	92-100	88-100	85-95	56-76	33-49
	9-24	Clay loam, silty clay loam, silty clay.	CH	A-7	98-100	92-100	88-100	80-95	51-76	30-49
	24-62	Silty clay, clay	CH	A-7	96-100	92-100	88-100	85-98	56-76	33-49
FvA: Fluvaquents	0-6	Silt loam	ML, CL-ML	A-4	100	90-100	80-90	50-80	<25	NP-7
	6-80	Stratified sandy loam to clay.	ML, CL	A-7, A-4, A-6	100	90-100	75-100	60-95	20-45	8-22

See footnote at end of table.

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In								Pct	
KmA*:										
Kinston	0-8	Clay loam	ML, CL, CL-ML	A-4, A-6, A-7	100	98-100	85-100	50-97	17-49	4-18
	8-55	Loam, silt loam, silty clay loam.	CL, CL-ML	A-4, A-6, A-7	100	95-100	75-100	60-95	20-45	7-22
	55-65	Variable	---	---	---	---	---	---	---	---
Mantachie	0-12	Loam	CL-ML, SC-SM, SM, ML	A-4	95-100	90-100	60-85	40-60	<20	NP-5
	12-62	Loam, clay loam, sandy clay loam.	CL, SC, SC-SM, CL-ML	A-4, A-6	95-100	90-100	80-95	45-80	20-40	5-15
LdA: Lucedale	0-7	Loam	SM, ML	A-2, A-4	100	95-100	80-95	25-65	<30	NP-3
	7-72	Sandy clay loam, clay loam, loam.	CL-ML, SC, CL, SC-SM	A-4, A-6, A-2	95-100	95-100	80-100	30-75	25-40	4-15
LnC: Luverne	0-7	Sandy loam	ML, SM	A-4, A-2	87-100	84-100	80-100	30-60	<20	NP
	7-31	Clay loam, sandy clay, clay.	ML, MH	A-5, A-7, A-4	95-100	90-100	85-100	50-95	38-70	8-30
	31-41	Clay loam, sandy clay loam.	ML, MH, SM	A-4, A-5, A-7	95-100	85-100	85-100	36-76	32-56	2-14
	41-60	Stratified loamy sand to sandy clay loam.	SM, ML	A-4, A-6, A-2, A-7	90-100	85-100	70-100	25-65	28-49	3-16
LsD*:										
Luverne	0-9	Sandy loam	ML, SM	A-4, A-2	87-100	84-100	80-100	30-60	<20	NP
	9-42	Clay loam, sandy clay, clay.	ML, MH	A-5, A-7, A-4	95-100	90-100	85-100	50-95	38-70	8-30
	42-60	Stratified loamy sand to sandy clay loam.	SM, ML	A-4, A-6, A-2, A-7	90-100	85-100	70-100	25-65	28-49	3-16
Smithdale	0-12	Sandy loam	SM, SC-SM	A-4, A-2	100	85-100	60-95	28-49	<20	NP-5
	12-41	Clay loam, sandy clay loam, loam.	SC-SM, SC, CL, CL-ML	A-6, A-4	100	85-100	80-96	45-75	23-38	7-16
	41-60	Loam, sandy loam	SM, ML, CL, SC	A-4	100	85-100	65-95	36-70	<30	NP-10
MaA: Myatt	0-7	Fine sandy loam	SM, SC-SM, ML, CL-ML	A-2, A-4	95-100	95-100	60-90	30-70	<25	NP-5
	7-53	Loam, sandy clay loam, clay loam.	SM, SC, ML, CL	A-4	95-100	95-100	80-100	40-80	<30	NP-10
	53-72	Sandy loam, sandy clay loam, clay loam.	SC-SM, SC, CL-ML, CL	A-6, A-4, A-2	75-100	60-90	60-80	30-70	15-40	5-20
McA*:										
Myatt	0-9	Fine sandy loam	SM, SC-SM, ML, CL-ML	A-2, A-4	95-100	95-100	60-90	30-70	<25	NP-5
	9-50	Loam, sandy clay loam, clay loam.	SM, SC, ML, CL	A-4	95-100	95-100	80-100	40-80	<30	NP-10
	50-70	Sandy loam sandy clay loam, clay loam.	SC-SM, SC, CL-ML, CL	A-6, A-4, A-2	75-100	60-90	60-80	30-70	15-40	5-20

See footnote at end of table.

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In								Pct	
McA*:										
Columbus	0-8	Loam	ML, CL-ML, CL	A-4	100	100	90-100	70-90	<30	3-10
	8-44	Clay loam, loam, sandy clay loam.	CL, SC	A-4, A-6	100	90-100	80-95	40-80	22-35	8-15
	44-65	Sandy loam, loamy sand, sand.	SM, SP-SM	A-2, A-4	100	90-100	50-85	10-45	<20	NP-4
OcA*:										
Ochlockonee	0-11	Sandy loam	SM, ML, SC-SM, CL-ML	A-4, A-2	100	95-100	65-90	40-70	<26	NP-5
	11-32	Fine sandy loam, sandy loam, silt loam.	SM, ML, SC, CL	A-4	100	95-100	95-100	36-75	<32	NP-9
	32-65	Loamy sand, sandy loam, silt loam.	SM, ML, CL, SC	A-4, A-2	100	95-100	85-99	13-80	<32	NP-9
Kinston	0-4	Loam	ML, CL, CL-ML	A-4, A-6	100	98-100	85-100	50-97	17-40	4-15
	4-63	Loam, clay loam, sandy clay loam.	CL, CL-ML	A-4, A-6, A-7	100	95-100	75-100	60-95	20-45	8-22
	63-68	Variable	---	---	---	---	---	---	---	---
Iuka	0-10	Silt loam	ML, CL-ML	A-4	95-100	95-100	80-95	50-80	<30	NP-7
	10-24	Fine sandy loam, loam, sandy loam.	SM, SC-SM, ML, CL-ML	A-4	95-100	85-100	65-100	36-75	<30	NP-7
	24-60	Sandy loam, fine sandy loam, loamy sand.	SM, ML	A-2, A-4	95-100	90-100	70-100	25-60	<30	NP-7
OkA Okolona	0-16	Silty clay	CL, CH	A-7	100	100	95-100	85-95	46-55	25-32
	16-65	Silty clay, clay	CH	A-7	95-100	95-100	95-100	90-95	60-90	36-65
OkB Okolona	0-22	Silty clay	CL, CH	A-7	100	100	95-100	85-95	46-55	25-32
	22-65	Silty clay, clay	CH	A-7	95-100	95-100	95-100	90-95	60-90	36-65
Pt* Pits	0-60	Variable	---	---	---	---	---	---	---	---
RvA Riverview	0-6	Loam	CL, CL-ML, ML	A-4, A-6	100	100	90-100	60-80	15-30	3-14
	6-51	Sandy clay loam, silty clay loam, loam.	CL, ML, CL-ML	A-4, A-6	100	100	90-100	60-95	20-40	3-20
	51-65	Loamy fine sand, sandy loam, sand.	SM, SC-SM	A-2, A-4	100	100	50-95	15-45	<20	NP-7
SaC Sacul	0-5	Sandy loam	SM, SC-SM	A-4, A-2	75-100	75-100	45-85	25-50	15-25	NP-7
	5-42	Clay, silty clay, clay loam.	CH, CL, SC	A-7	85-100	85-100	70-100	40-95	45-70	20-40
	42-65	Silty clay loam, clay loam, loam.	CL, SC	A-6, A-7, A-4, A-2	85-100	85-100	65-100	30-95	25-48	8-25

See footnote at end of table.

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plasticity index
	In								Pct	
ShA, ShB---------	0-12	Loam-------------	ML, CL-ML	A-4	100	90-100	80-100	60-90	<25	NP-7
Savannah	12-26	Sandy clay loam, clay loam, loam.	CL, SC, CL-ML	A-4, A-6	98-100	90-100	80-100	40-80	20-40	5-19
	26-65	Loam, clay loam, sandy clay loam.	CL, SC, CL-ML	A-4, A-6, A-7, A-2	94-100	90-100	60-100	30-80	20-43	5-19
SmC--------------	0-7	Sandy loam-------	SM, SC-SM	A-4, A-2	100	85-100	60-95	28-49	<20	NP-5
Smithdale	7-57	Clay loam, sandy clay loam, loam.	SC-SM, SC, CL, CL-ML	A-6, A-4	100	85-100	80-96	45-75	23-38	7-16
	57-65	Sandy loam, loamy sand.	SM, ML, CL	A-4	100	85-100	65-95	36-70	<30	NP-10
SnF*:										
Smithdale-------	0-12	Sandy loam-------	SM, SC-SM	A-4, A-2	100	85-100	60-95	28-49	<20	NP-5
	12-47	Clay loam, sandy clay loam, loam.	SC-SM, SC, CL, CL-ML	A-6, A-4	100	85-100	80-96	45-75	23-38	7-16
	47-60	Sandy loam, loamy sand.	SM, ML, CL	A-4	100	85-100	65-95	36-70	<30	NP-10
Luverne---------	0-5	Sandy loam-------	ML, SM	A-4, A-2	87-100	84-100	80-100	30-60	<20	NP
	5-19	Clay loam, sandy clay, clay.	ML, MH	A-5, A-7, A-4	95-100	90-100	85-100	50-95	38-70	8-30
	19-41	Clay loam, sandy clay loam.	ML, MH, SM	A-4, A-5, A-7	95-100	85-100	85-100	36-76	32-56	2-14
	41-65	Stratified loamy sand to sandy clay loam.	SM, ML	A-4, A-6, A-2, A-7	90-100	85-100	70-100	25-65	28-49	3-16
Sacul-----------	0-5	Sandy loam-------	SM, SC-SM	A-4, A-2	75-100	75-100	45-85	25-50	15-25	NP-7
	5-12	Sandy loam, fine sandy loam, loamy fine sand.	SM, ML, SC-SM, CL-ML	A-2, A-4, A-1	75-100	75-100	40-95	12-75	15-30	NP-10
	12-33	Clay, silty clay, clay loam.	CH, CL, SC	A-7	85-100	85-100	70-100	40-95	45-70	20-40
	33-60	Silty clay loam, clay loam, loam.	CL, SC	A-6, A-7, A-4, A-2	85-100	85-100	65-100	30-95	25-48	8-25
SrA--------------	0-23	Silty clay-------	CL, CH, MH	A-7	98-100	95-100	90-100	85-95	40-65	15-35
Sucarnoochee	23-36	Silty clay, clay	MH, CH, CL	A-7	98-100	95-100	90-100	79-98	45-70	20-40
	36-65	Silty clay, clay	CH, MH	A-7	98-100	95-100	90-100	85-98	50-80	25-45
SuC2-------------	0-5	Silty clay loam	CL	A-7, A-6	90-100	85-100	80-98	75-90	35-50	16-25
Sumter	5-27	Silty clay, clay, silty clay loam.	CH, CL	A-7, A-6	85-100	78-98	75-95	75-95	35-55	16-32
	27-65	Weathered bedrock	---	---	---	---	---	---	---	---
SuE2-------------	0-3	Silty clay loam	CL	A-7, A-6	90-100	85-100	80-98	75-90	35-50	16-25
Sumter	3-23	Silty clay, clay, silty clay loam.	CH, CL	A-7, A-6	85-100	78-98	75-95	75-95	35-55	16-32
	23-65	Weathered bedrock	---	---	---	---	---	---	---	---
UdC--------------	0-6	Loamy sand-------	SM	A-2-4	100	100	60-90	15-30	<20	NP
Udorthents	6-80	Stratified loamy sand to clay loam.	SM, ML, CL, SC	A-2, A-4, A-6	100	100	80-100	30-80	NP-30	NP-25
UrB*:										
Urbo------------	0-4	Silty clay loam	CL	A-6	100	100	95-100	95-100	30-40	15-25
	4-65	Silty clay, clay loam, silty clay loam.	CL, CH	A-7	100	100	95-100	80-98	44-62	20-36

See footnote at end of table.

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas- ticity index
	In								Pct	
UrB*:										
Mooreville------	0-6	Loam-------------	CL-ML, CL, SC-SM, SC	A-4	100	100	80-100	40-85	20-30	5-10
	6-51	Sandy clay loam, clay loam, loam.	CL, SC	A-6, A-7	100	100	80-95	45-80	28-50	15-30
	51-65	Loam, sandy clay loam, sandy loam	SC, CL	A-6, A-7, A-4.	100	100	80-95	45-80	28-50	15-30
Una-------------	0-4	Silty clay loam	CH, CL	A-7	100	94-100	90-100	75-95	41-65	20-40
	4-65	Clay, silty clay loam, silty clay.	CH, CL	A-7	100	94-100	90-100	75-95	41-65	20-40
VdA-------------- Vaiden	0-7	Silty clay-------	MH, CH	A-7	100	100	95-100	90-100	50-60	20-30
	7-65	Clay-------------	CH, MH	A-7	100	100	95-100	85-100	50-90	30-50
VdB-------------- Vaiden	0-5	Silty clay-------	MH, CH	A-7	100	100	95-100	90-100	50-60	20-30
	5-65	Clay-------------	CH, MH	A-7	100	100	95-100	85-100	50-90	30-50

* See description of the map unit for composition and behavior characteristics of the map unit.

Table 16.--Physical and Chemical Properties of the Soils

(The symbol < means less than; > means more than. Entries under "Erosion factors--T" apply to the entire profile. Entries under "Organic matter" apply only to the surface layer. Absence of an entry indicates that data were not available or were not estimated)

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors K	Erosion factors T	Organic matter
	In	Pct	g/cc	In/hr	In/in	pH				Pct
AnA-------------- Annemaine	0-8	10-20	1.30-1.55	0.6-2.0	0.12-0.16	4.5-6.5	Low----------	0.28	5	.5-2
	8-22	35-50	1.30-1.45	0.06-0.2	0.14-0.18	4.5-5.5	Moderate-----	0.37		
	22-31	35-60	1.25-1.40	0.06-0.2	0.14-0.18	4.5-5.5	Moderate-----	0.37		
	31-44	20-38	1.30-1.60	0.2-0.6	0.14-0.18	4.5-5.5	Low----------	0.37		
	44-65	5-25	1.40-1.60	0.2-2.0	0.14-0.18	4.5-5.5	Low----------	0.32		
BaA-------------- Bama	0-5	7-22	1.30-1.60	0.6-6.0	0.08-0.15	4.5-6.0	Low----------	0.24	5	.5-2
	5-43	18-32	1.40-1.55	0.6-2.0	0.12-0.18	4.5-5.5	Low----------	0.32		
	43-65	20-35	1.40-1.60	0.6-2.0	0.12-0.18	4.5-5.5	Low----------	0.32		
BaB-------------- Bama	0-6	7-22	1.30-1.60	0.6-6.0	0.08-0.15	4.5-6.0	Low----------	0.24	5	.5-2
	6-29	18-32	1.40-1.55	0.6-2.0	0.12-0.18	4.5-5.5	Low----------	0.32		
	29-65	20-35	1.40-1.60	0.6-2.0	0.12-0.18	4.5-5.5	Low----------	0.32		
BgB-------------- Bigbee	0-6	4-10	1.40-1.50	6.0-20	0.05-0.10	4.5-6.0	Low----------	0.10	5	.5-1
	6-88	1-10	1.40-1.50	6.0-20	0.05-0.08	4.5-6.0	Low----------	0.17		
CbA-------------- Cahaba	0-10	7-17	1.35-1.60	2.0-6.0	0.10-0.14	4.5-6.0	Low----------	0.24	5	.5-2
	10-38	15-35	1.35-1.60	0.6-2.0	0.12-0.20	4.5-6.0	Low----------	0.28		
	38-65	4-20	1.40-1.70	2.0-20	0.05-0.10	4.5-6.0	Low----------	0.24		
CoA-------------- Columbus	0-11	10-23	1.50-1.55	0.6-2.0	0.20-0.22	4.5-5.5	Low----------	0.37	5	.5-2
	11-44	17-35	1.55-1.60	0.6-2.0	0.12-0.15	4.5-5.5	Low----------	0.20		
	44-65	6-12	1.35-1.40	6.0-20	0.05-0.10	4.5-5.5	Low----------	0.17		
FaA, FaB--------- Faunsdale	0-9	40-60	0.90-1.40	0.06-0.2	0.14-0.20	6.6-8.4	High---------	0.37	5	2-7
	9-24	35-60	1.00-1.30	0.06-0.2	0.14-0.18	6.6-8.4	High---------	0.32		
	24-62	40-60	1.00-1.30	<0.06	0.12-0.18	6.6-8.4	High---------	0.32		
FvA-------------- Fluvaquents	0-6	2-18	1.25-1.35	2.0-6.0	0.15-0.20	3.6-5.5	Low----------	0.28	5	3-10
	6-80	15-45	1.35-1.60	0.06-0.2	0.10-0.20	3.6-5.5	Low----------	0.37		
KmA*:										
Kinston---------	0-8	5-32	1.30-1.50	0.6-2.0	0.14-0.20	4.5-6.0	Low----------	0.37	5	2-5
	8-55	15-35	1.30-1.50	0.6-2.0	0.14-0.18	4.5-5.5	Low----------	0.32		
	55-65	---	---	---	---	---	-------------	----		
Mantachie-------	0-12	8-20	1.50-1.60	0.6-2.0	0.16-0.20	4.5-5.5	Low----------	0.28	5	1-5
	12-62	18-34	1.50-1.60	0.6-2.0	0.14-0.20	4.5-5.5	Low----------	0.28		
LdA-------------- Lucedale	0-7	7-20	1.40-1.55	0.6-2.0	0.15-0.20	5.1-6.5	Low----------	0.24	5	.5-2
	7-72	20-35	1.55-1.70	0.6-2.0	0.14-0.18	4.5-5.5	Low----------	0.24		
LnC-------------- Luverne	0-7	7-20	1.35-1.65	2.0-6.0	0.11-0.15	3.6-5.5	Low----------	0.24	5	.5-2
	7-31	35-50	1.25-1.55	0.2-0.6	0.12-0.18	3.6-5.5	Moderate-----	0.28		
	31-41	20-40	1.35-1.65	0.2-0.6	0.12-0.18	3.6-5.5	Low----------	0.28		
	41-60	10-35	1.35-1.65	0.2-0.6	0.05-0.10	3.6-5.5	Low----------	0.28		
LsD*:										
Luverne---------	0-9	7-20	1.35-1.65	2.0-6.0	0.11-0.15	3.6-5.5	Low----------	0.24	5	.5-2
	9-42	35-50	1.25-1.55	0.2-0.6	0.12-0.18	3.6-5.5	Moderate-----	0.28		
	42-60	10-35	1.35-1.65	0.2-0.6	0.05-0.10	3.6-5.5	Low----------	0.28		
Smithdale-------	0-12	2-15	1.40-1.50	2.0-6.0	0.14-0.16	4.5-5.5	Low----------	0.28	5	.5-2
	12-41	18-33	1.40-1.55	0.6-2.0	0.15-0.17	4.5-5.5	Low----------	0.24		
	41-60	12-27	1.40-1.55	2.0-6.0	0.14-0.16	4.5-5.5	Low----------	0.28		

See footnote at end of table.

Table 16.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors K	Erosion factors T	Organic matter
	In	Pct	g/cc	In/hr	In/in	pH				Pct
MaA-------------- Myatt	0-7	7-20	1.30-1.60	0.6-2.0	0.11-0.20	4.5-6.0	Low----------	0.28	5	.5-4
	7-53	18-35	1.30-1.50	0.2-2.0	0.12-0.20	3.6-5.5	Low----------	0.28		
	53-72	7-30	1.30-1.50	0.2-2.0	0.10-0.20	3.6-5.5	Low----------	0.24		
McA*:										
Myatt-----------	0-9	7-20	1.30-1.60	0.6-2.0	0.11-0.20	4.5-6.0	Low----------	0.28	5	.5-4
	9-50	18-35	1.30-1.50	0.2-2.0	0.12-0.20	3.6-5.5	Low----------	0.28		
	50-70	7-30	1.30-1.50	0.2-2.0	0.10-0.20	3.6-5.5	Low----------	0.24		
Columbus--------	0-8	10-16	1.50-1.55	0.6-2.0	0.20-0.22	4.5-5.5	Low----------	0.37	5	.5-2
	8-44	18-33	1.55-1.60	0.6-2.0	0.12-0.15	4.5-5.5	Low----------	0.20		
	44-65	6-12	1.35-1.40	6.0-20	0.05-0.10	4.5-5.5	Low----------	0.17		
OcA*:										
Ochlockonee-----	0-11	3-18	1.40-1.60	2.0-6.0	0.07-0.14	4.5-6.5	Low----------	0.20	5	.5-2
	11-32	8-18	1.40-1.60	0.6-2.0	0.10-0.20	4.5-5.5	Low----------	0.20		
	32-65	3-18	1.40-1.70	2.0-6.0	0.06-0.12	4.5-5.5	Low----------	0.17		
Kinston---------	0-4	5-27	1.30-1.50	0.6-2.0	0.14-0.20	4.5-6.0	Low----------	0.37	5	2-5
	4-63	18-35	1.30-1.50	0.6-2.0	0.14-0.18	4.5-5.5	Low----------	0.32		
	63-68	---	---	---	---	---	-------------	----		
Iuka------------	0-10	6-15	1.40-1.60	0.6-2.0	0.15-0.20	5.1-6.0	Low----------	0.37	5	.5-2
	10-24	8-18	1.40-1.60	0.6-2.0	0.10-0.20	4.5-5.5	Low----------	0.28		
	24-60	5-15	1.40-1.70	0.6-2.0	0.10-0.20	4.5-5.5	Low----------	0.20		
OkA-------------- Okolona	0-16	40-55	1.30-1.50	<0.06	0.20-0.22	6.6-8.4	High---------	0.37	5	2-7
	16-65	40-55	1.30-1.50	<0.06	0.18-0.20	6.6-8.4	Very high----	0.32		
OkB-------------- Okolona	0-22	40-55	1.30-1.50	<0.06	0.20-0.22	6.6-8.4	High---------	0.37	5	2-7
	22-65	40-55	1.30-1.50	<0.06	0.18-0.20	6.6-8.4	Very high----	0.32		
Pt*-------------- Pits	0-60	---	---	---	---	---	-------------	----	---	---
RvA-------------- Riverview	0-6	10-27	1.30-1.60	0.6-2.0	0.16-0.24	4.5-6.5	Low----------	0.32	5	.5-2
	6-51	18-35	1.20-1.40	0.6-2.0	0.15-0.22	4.5-6.0	Low----------	0.24		
	51-65	4-18	1.20-1.50	2.0-6.0	0.07-0.11	4.5-6.0	Low----------	0.17		
SaC-------------- Sacul	0-5	5-20	1.30-1.50	0.6-2.0	0.09-0.12	4.5-6.0	Low----------	0.28	5	.5-2
	5-42	35-60	1.25-1.40	0.06-0.2	0.15-0.18	3.6-5.5	High---------	0.32		
	42-65	15-40	1.30-1.45	0.2-0.6	0.14-0.18	3.6-5.5	Low----------	0.28		
ShA, ShB--------- Savannah	0-12	3-16	1.40-1.60	0.6-2.0	0.15-0.24	3.6-5.5	Low----------	0.37	4	.5-2
	12-26	18-32	1.45-1.65	0.6-2.0	0.11-0.17	3.6-5.5	Low----------	0.28		
	26-65	18-32	1.60-1.80	0.2-0.6	0.05-0.10	3.6-5.5	Low----------	0.24		
SmC-------------- Smithdale	0-7	2-15	1.40-1.50	2.0-6.0	0.14-0.16	4.5-5.5	Low----------	0.28	5	.5-2
	7-57	18-33	1.40-1.55	0.6-2.0	0.15-0.17	4.5-5.5	Low----------	0.24		
	57-65	12-27	1.40-1.55	2.0-6.0	0.14-0.16	4.5-5.5	Low----------	0.28		
SnF*:										
Smithdale-------	0-12	2-15	1.40-1.50	2.0-6.0	0.14-0.16	4.5-5.5	Low----------	0.28	5	.5-2
	12-47	18-33	1.40-1.55	0.6-2.0	0.15-0.17	4.5-5.5	Low----------	0.24		
	47-60	12-27	1.40-1.55	2.0-6.0	0.14-0.16	4.5-5.5	Low----------	0.28		

See footnote at end of table.

Table 16.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors K	Erosion factors T	Organic matter
	In	Pct	g/cc	In/hr	In/in	pH				Pct
SnF*:										
Luverne	0-5	7-20	1.35-1.65	2.0-6.0	0.11-0.15	3.6-5.5	Low	0.24	5	.5-2
	5-19	35-50	1.25-1.55	0.2-0.6	0.12-0.18	3.6-5.5	Moderate	0.28		
	19-41	20-40	1.35-1.65	0.2-0.6	0.12-0.18	3.6-5.5	Low	0.28		
	41-65	10-35	1.35-1.65	0.2-0.6	0.05-0.10	3.6-5.5	Low	0.28		
Sacul	0-5	5-20	1.30-1.50	0.6-2.0	0.09-0.12	4.5-6.0	Low	0.28	5	.5-2
	5-12	2-25	1.40-1.60	0.6-2.0	0.07-0.17	4.5-6.0	Low	0.28		
	12-33	35-60	1.25-1.40	0.06-0.2	0.15-0.18	3.6-5.5	High	0.32		
	33-60	15-40	1.30-1.45	0.2-0.6	0.14-0.18	3.6-5.5	Low	0.28		
SrA Sucarnoochee	0-23	40-60	1.20-1.50	0.06-0.2	0.14-0.20	6.6-8.4	High	0.32	5	2-7
	23-36	40-60	1.00-1.30	<0.06	0.14-0.18	6.6-8.4	High	0.32		
	36-65	45-70	1.00-1.30	<0.06	0.12-0.18	6.6-8.4	High	0.32		
SuC2 Sumter	0-5	30-40	1.30-1.60	0.06-2.0	0.12-0.17	6.6-8.4	High	0.37	3	2-5
	5-27	35-57	1.15-1.55	0.06-2.0	0.12-0.17	7.4-8.4	High	0.37		
	27-65	---	---	0.00-0.01	---	---	-------------	----		
SuE2 Sumter	0-3	30-40	1.30-1.60	0.06-2.0	0.12-0.17	6.6-8.4	High	0.37	3	2-5
	3-23	35-57	1.15-1.55	0.06-2.0	0.12-0.17	7.4-8.4	High	0.37		
	23-65	---	---	0.00-0.01	---	---	-------------	----		
UdC Udorthents	0-6	4-12	1.35-1.65	2.0-6.0	0.05-0.10	3.6-5.5	Low	0.10	5	.5-2
	6-80	5-20	1.35-1.65	0.06-2.0	0.10-0.18	3.6-5.5	Low	0.15		
UrB*:										
Urbo	0-4	27-35	1.40-1.50	0.06-0.2	0.19-0.21	4.5-5.5	Low	0.49	5	1-5
	4-65	35-55	1.45-1.55	<0.06	0.18-0.20	4.5-5.5	Moderate	0.28		
Mooreville	0-6	5-27	1.40-1.50	0.6-2.0	0.14-0.20	4.5-5.5	Low	0.37	5	.5-2
	6-51	18-35	1.40-1.50	0.6-2.0	0.14-0.18	4.5-5.5	Moderate	0.28		
	51-65	10-40	1.40-1.60	0.6-2.0	0.14-0.18	4.5-5.5	Moderate	0.28		
Una	0-4	28-35	1.40-1.60	<0.06	0.15-0.20	4.5-5.5	High	0.32	5	1-5
	4-65	35-55	1.40-1.60	<0.06	0.15-0.20	4.5-5.5	High	0.28		
VdA Vaiden	0-7	40-60	1.10-1.40	0.06-0.2	0.10-0.15	4.5-6.5	High	0.32	5	1-5
	7-65	60-75	1.00-1.30	<0.06	0.10-0.15	4.5-6.5	Very high	0.32		
VdB Vaiden	0-5	40-60	1.10-1.40	0.06-0.2	0.10-0.15	4.5-6.5	High	0.32	5	1-5
	5-65	60-75	1.00-1.30	<0.06	0.10-0.15	4.5-6.5	Very high	0.32		

* See description of the map unit for composition and behavior characteristics of the map unit.

Table 17.--Soil and Water Features

("Flooding" and "water table" and terms such as "brief," "apparent," and "perched" are explained in the text. The symbol < means less than; > means more than. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Soil name and map symbol	Hydro-logic group	Flooding: Frequency	Flooding: Duration	Flooding: Months	High water table: Depth	High water table: Kind	High water table: Months	Bedrock: Depth	Bedrock: Hardness	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
					Ft			In			
AnA: Annemaine	C	Occasional	Brief	Jan-Apr	1.5-2.5	Apparent	Jan-Apr	>60	---	High	High.
BaA, BaB: Bama	B	None	---	---	>6.0	---	---	>60	---	Low	Moderate.
BgB: Bigbee	A	Occasional	Brief	Jan-Apr	3.5-6.0	Apparent	Jan-Apr	>60	---	Low	Moderate.
CbA: Cahaba	B	Occasional	Brief	Jan-Apr	>6.0	---	---	>60	---	Moderate	Moderate.
CoA: Columbus	C	Occasional	Brief	Jan-Apr	2.0-3.0	Apparent	Jan-Apr	>60	---	High	High.
FaA, FaB: Faunsdale	D	None	---	---	1.0-2.0	Perched	Jan-Apr	>60	---	High	Low.
FvA: Fluvaquents	D	Frequent	Brief	Jan-Dec	+2-1.0	Apparent	Jan-Dec	>60	---	High	High.
KmA*:											
Kinston	D	Frequent	Brief	Jan-Apr	0-1.0	Apparent	Jan-Jun	>60	---	High	High.
Mantachie	C	Frequent	Brief	Jan-Apr	1.0-1.5	Apparent	Jan-Apr	>60	---	High	High.
LdA: Lucedale	B	None	---	---	>6.0	---	---	>60	---	Moderate	Moderate.
LnC: Luverne	C	None	---	---	>6.0	---	---	>60	---	High	High.
LsD*:											
Luverne	C	None	---	---	>6.0	---	---	>60	---	High	High.
Smithdale	B	None	---	---	>6.0	---	---	>60	---	Low	Moderate.
MaA: Myatt	D	Occasional	Brief	Jan-Apr	0-1.0	Apparent	Jan-Apr	>60	---	High	High.
McA*:											
Myatt	D	Occasional	Brief	Jan-Apr	0-1.0	Apparent	Jan-Apr	>60	---	High	High.
Columbus	C	Occasional	Brief	Jan-Apr	2.0-3.0	Apparent	Jan-Apr	>60	---	High	High.
OcA*:											
Ochlockonee	B	Frequent	Brief	Jan-Apr	3.0-5.0	Apparent	Jan-Apr	>60	---	Low	High.
Kinston	D	Frequent	Brief	Jan-Apr	0-1.0	Apparent	Jan-Jun	>60	---	High	High.

See footnote at end of table.

Table 17.--Soil and Water Features--Continued

Soil name and map symbol	Hydro- logic group	Flooding: Frequency	Flooding: Duration	Flooding: Months	High water table: Depth	High water table: Kind	High water table: Months	Bedrock: Depth	Bedrock: Hard- ness	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
					Ft			In			
OcA*:											
Iuka	C	Frequent	Brief	Jan-Apr	1.0-3.0	Apparent	Jan-Apr	>60	---	Moderate	High.
OkA, OkB Okolona	D	None	---	---	4.0-6.0	Perched	Jan-Apr	>60	---	High	Moderate.
Pt* Pits	-	None	---	---	>6.0	---	---	>60	---	---	---
RvA Riverview	B	Frequent	Brief	Jan-Apr	3.0-5.0	Apparent	Jan-Apr	>60	---	Low	Moderate.
SaC Sacul	C	None	---	---	2.0-4.0	Perched	Jan-Apr	>60	---	High	High.
ShA, ShB Savannah	C	None	---	---	1.5-3.0	Perched	Jan-Apr	>60	---	Moderate	High.
SmC Smithdale	B	None	---	---	>6.0	---	---	>60	---	Low	Moderate.
SnF*:											
Smithdale	B	None	---	---	>6.0	---	---	>60	---	Low	Moderate.
Luverne	C	None	---	---	>6.0	---	---	>60	---	High	High.
Sacul	C	None	---	---	2.0-4.0	Perched	Jan-Apr	>60	---	High	High.
SrA Sucarnoochee	D	Frequent	Brief	Jan-Apr	0.5-1.5	Perched	Jan-Apr	>60	---	High	Low.
SuC2, SuE2 Sumter	C	None	---	---	>6.0	---	---	20-40	Soft	Moderate	Low.
UdC Udorthents	B	Rare to Occasional	Brief	Jan-Apr	---	---	---	>60	---	High	High.
UrB*:											
Urbo	D	Frequent	Brief	Jan-Apr	1.0-2.0	Perched	Jan-Apr	>60	---	High	High.
Mooreville	C	Frequent	Brief	Jan-Apr	1.5-3.0	Apparent	Jan-Apr	>60	---	Moderate	High.
Una	D	Frequent	Brief	Jan-Apr	+2-0.5	Perched	Jan-Jun	>60	---	High	High.
VdA, VdB Vaiden	D	None	---	---	1.0-2.0	Perched	Jan-Apr	>60	---	High	High.

* See description of the map unit for composition and behavior characteristics of the map unit.

Table 18.--Physical Analyses of Selected Soils

(The soils are the typical pedons for the series in Pickens County. For the description and location of the pedons, see "Soil Series and their Morphology." Analyses by the Agronomy and Soils Clay Mineralogy Laboratory, Auburn University, Auburn, Alabama)

Soil name and sample number	Depth	Horizon	Particle-size distribution (Percent less than 2.0 mm)		
			Sand (2.0-0.05 mm)	Silt (0.05-0.002 mm)	Clay (<0.002 mm)
	In				
Annemaine:	0-3	Ap	34.7	48.8	16.5
(S88AL-107-4)	3-8	E	33.7	50.1	16.2
	8-22	Bt1	6.7	43.3	50.0
	22-31	Bt2	11.1	45.7	43.2
	31-39	Bt3	20.9	42.3	36.8
	39-44	BC	37.9	33.4	28.7
	44-52	C1	54.7	22.9	22.4
	52-65	C2	86.7	3.7	9.6
Bama:	0-5	Ap	46.6	37.0	16.4
(S85AL-107-9)	5-22	Bt1	34.3	38.2	27.5
	22-43	Bt2	39.7	30.5	29.8
	43-54	Bt3	46.5	22.4	31.1
	54-65	Bt4	45.7	24.4	29.9
Cahaba:	0-6	Ap	75.5	16.4	8.1
(S83AL-107-4)	6-10	BA	65.0	15.9	19.1
	10-26	Bt1	44.6	24.6	30.8
	26-31	Bt2	59.5	20.2	20.3
	31-38	Bt3	72.1	12.2	15.7
	38-53	C1	83.8	6.4	9.8
	53-65	C2	83.7	7.6	8.7
Columbus:	0-3	Ap1	38.0	39.5	22.5
(S89AL-107-10)	3-6	Ap2	45.0	37.2	17.8
	6-11	E	50.7	34.5	14.8
	11-29	Bt1	20.2	46.3	33.5
	29-38	Bt2	46.4	34.8	18.8
	38-44	Btg	52.0	30.3	17.7
	44-65	C	64.9	23.9	11.2
Kinston:	0-5	A1	22.1	46.6	31.3
(S86AL-107-2)	5-8	A2	23.3	51.6	25.1
	8-25	Cg1	26.9	58.1	15.0
	25-45	Cg2	18.4	53.4	28.2
	45-55	Cg3	25.1	49.9	25.0
	55-65	Cg4	80.6	13.0	6.4
Lucedale:	0-7	Ap	39.3	43.6	17.1
(S85AL-107-10)	7-16	Bt1	29.7	43.4	26.9
	16-39	Bt2	38.1	26.7	35.2
	39-72	Bt3	45.6	24.1	30.3
Okolona:	0-4	Ap	12.9	40.1	47.0
(S83AL-107-6)	4-16	A	10.2	36.7	53.1
	16-22	Bkss1	11.5	34.3	54.2
	22-38	Bkss2	12.5	34.7	52.8
	38-50	Bkss3	10.2	35.1	54.7
	50-65	Bkss4	10.1	34.5	55.4

Table 18.-- Physical Analyses of Selected Soils--Continued

Soil name and sample number	Depth	Horizon	Particle-size distribution (Percent less than 2.0 mm)		
			Sand (2.0-0.05 mm)	Silt (0.05-0.002 mm)	Clay (<0.002 mm)
	In				
Savannah:	0-7	Ap	42.1	48.7	9.2
(S83AL-107-2)	7-12	AE	44.9	45.3	9.8
	12-19	Bt1	31.0	47.4	21.1
	19-26	Bt2	35.5	43.8	20.7
	26-37	Btx1	38.0	35.8	26.2
	37-49	Btx2	37.1	33.7	29.2
	49-65	Btx3	34.8	36.2	28.9
Sucarnoochee:	0-10	Ap	13.3	44.9	41.8
(S85AL-107-11)	10-23	AB	9.4	36.3	54.3
	23-36	Bssg1	22.5	17.5	60.0
	36-65	Bssg2	27.1	16.0	57.0
Sumter:	0-5	Ap	19.9	41.1	39.1
(S82AL-107-3)	5-10	Bk1	16.4	34.2	49.4
	10-19	Bk2	13.9	35.1	51.0
	19-27	Bk3	12.8	33.2	54.0
	27-65	Cr	----	----	----

Table 19.--Chemical Analyses of Selected Soils

(The soils are the typical pedons for the series in Pickens County. For the description and location of the pedons, see "Soil Series and Their Morphology." Analyses by the Agronomy and Soils Clay Mineralogy Laboratory, Auburn University, Auburn Alabama)

Soil name and sample number	Depth	Horizon	Extractable bases				Extractable acidity	Cation-exchange capacity	Base saturation	Reaction
			Ca	K	Mg	Na				
	In		Meq/100g				Meq/100g	Meq/100g	Pct	pH
Annemaine:	0-3	Ap	3.44	0.58	0.50	0.10	1.12	8.8	61	5.2
(S88AL-107-4)	3-8	E	2.53	0.40	0.30	0.12	1.78	8.0	50	5.1
	8-22	Bt1	4.54	0.80	1.35	0.15	10.18	21.5	49	4.8
	22-31	Bt2	2.34	0.89	1.70	0.15	12.18	21.3	47	4.6
	31-39	Bt3	1.06	0.60	1.65	0.15	12.01	19.1	32	4.6
	39-44	BC	0.60	0.49	1.27	0.13	10.05	15.4	24	4.7
	44-52	C1	0.28	0.67	0.99	0.11	8.66	12.8	25	4.7
	52-65	C2	0.29	0.50	0.37	0.09	3.09	4.8	23	4.7
Bama:	0-5	Ap	2.69	0.35	1.02	0.10	0.13	4.0	58	6.1
(S85AL-107-9)	5-22	Bt1	3.29	0.11	0.95	0.10	0.09	4.6	62	5.7
	22-43	Bt2	2.72	0.07	1.20	0.10	0.13	5.5	53	5.6
	43-54	Bt3	0.87	0.07	1.02	0.10	2.94	6.4	28	4.6
	54-65	Bt4	0.70	0.07	1.14	0.10	2.89	5.0	25	4.6
Cahaba:	0-6	Ap	2.40	0.16	0.16	---	2.24	4.9	55	5.0
(S83AL-107-4)	6-10	BA	1.23	0.28	0.32	---	2.80	4.6	39	4.8
	10-26	Bt1	3.45	0.15	1.39	---	4.80	9.8	51	4.8
	26-31	Bt2	1.13	0.10	0.84	---	5.44	7.5	27	4.5
	31-38	Bt3	0.58	0.09	0.71	---	5.12	6.5	21	4.4
	38-53	C1	0.25	0.07	0.61	---	3.28	4.2	22	4.6
	53-65	C2	0.38	0.06	0.68	---	3.52	4.6	24	4.7
Columbus:	0-3	Ap1	1.39	0.33	0.64	0.16	2.47	9.8	38	5.0
(S89AL-107-10)	3-6	Ap2	1.04	0.59	0.15	0.13	2.69	6.4	27	4.8
	6-11	E	1.15	0.23	0.19	0.14	2.18	4.8	37	4.8
	11-29	Bt1	0.91	0.65	0.19	0.13	6.70	10.6	19	4.6
	29-38	Bt2	0.13	0.17	0.17	0.13	3.96	6.4	11	4.6
	38-44	Btg	0.11	0.18	0.07	0.14	4.26	6.1	11	4.5
	44-65	C	0.11	0.16	0.04	0.14	2.70	3.8	12	4.6
Kinston:	0-5	A1	2.94	0.09	1.13	0.14	2.18	14.4	50	4.9
(S86AL-107-2)	5-8	A2	1.40	0.04	0.67	0.12	1.99	6.2	38	5.1
	8-25	Cg1	0.47	0.02	0.28	0.12	3.50	5.6	17	4.8
	25-45	Cg2	0.25	0.04	0.34	0.17	8.82	9.8	9	4.4
	45-55	Cg3	0.30	0.06	0.35	0.16	5.80	7.8	14	4.0
	55-65	Cg4	0.27	0.03	0.15	0.10	1.41	2.2	19	4.8
Lucedale:	0-7	Ap	1.85	0.26	0.83	0.09	0.18	3.4	46	5.5
(S85AL-107-10)	7-16	Bt1	2.72	0.19	0.85	0.09	0.16	6.2	49	5.3
	16-39	Bt2	1.25	0.05	0.76	0.10	2.92	7.2	26	4.6
	39-72	Bt3	0.72	0.05	0.62	0.10	2.89	5.6	20	4.5
Okolona:	0-4	Ap	33.13	0.11	0.25	---	2.48	36.0	93	6.5
(S83AL-107-6)	4-16	A	36.48	0.05	0.10	---	2.32	39.0	94	7.6
	16-22	Bkss1	37.43	0.04	0.06	---	2.56	40.1	93	7.9
	22-38	Bkss2	37.33	0.04	0.06	---	3.12	40.5	92	7.9
	38-50	Bkss3	39.90	0.04	0.06	---	3.68	43.7	92	7.8
	50-65	Bkss4	36.40	0.05	0.11	---	3.20	39.8	92	7.9

Table 19.--Chemical Analyses of Selected Soils--Continued

Soil name and sample number	Depth	Horizon	Extractable bases Ca	K	Mg	Na	Extractable acidity	Cation-exchange capacity	Base saturation	Reaction
	In		Meq/100g				Meq/100g	Meq/100g	Pct	pH
Savannah:	0-7	Ap	3.58	0.10	1.68	---	1.28	6.6	80	5.9
(S83AL-107-2)	7-12	AE	2.90	0.04	0.83	---	1.44	5.2	72	5.9
	12-19	Bt1	2.08	0.05	0.57	---	3.28	5.8	45	4.8
	19-26	Bt2	1.50	0.04	0.47	---	3.76	5.8	34	4.6
	26-37	Btx1	0.43	0.06	0.66	---	4.24	5.4	21	4.3
	37-49	Btx2	0.20	0.06	0.55	---	4.32	5.1	15	4.4
	49-65	Btx3	0.25	0.06	0.49	---	8.16	8.9	9	4.3
Sucarnoochee:	0-10	Ap	36.05	0.12	0.57	0.16	0.03	35.2	93	7.6
(S85AL-107-11)	10-23	AB	43.94	0.05	0.28	0.23	0.05	31.4	95	7.9
	23-36	Bssg1	33.01	0.09	0.16	0.49	0.02	43.6	94	7.7
	36-65	Bssg2	29.94	0.10	0.21	0.78	0.00	38.6	95	7.4
Sumter:	0-5	Ap	53.19	0.12	0.46	0.14	0.09	18.7	97	7.3
(S82AL-107-3)	5-10	Bk1	48.23	0.09	0.29	0.16	0.10	16.0	97	7.8
	10-19	Bk2	47.93	0.09	0.27	0.17	0.11	15.5	97	7.8
	19-27	Bk3	46.51	0.11	0.29	0.19	0.09	15.9	97	8.0
	27-65	Cr	47.83	0.15	0.46	0.30	0.13	15.3	98	7.7

Table 20.--Engineering Index Test Data

(Dashes indicate data were not available. LL means liquid limit; PI means plasticity index; MD, maximum dry density; OM, optimum moisture; and NP, nonplastic. The soils are the typical pedons for the series in Pickens County. For the description and location of the pedons, see the section "Soil Series and Their Morphology." Analyses by the Alabama Highway Department, Bureau of Materials and Tests, Montgomery, Alabama)

Soil name, report number, horizon, and depth in inches	Classification		Grain-size distribution, Percentage passing sieve--				LL	PI	Moisture density	
	AASHTO	Unified	No. 4	No. 10	No. 40	No. 200			MD	OM
							Pct		Lb/ cu ft	Pct
Bama:										
(S85AL-107-9)										
Ap----- 0 to 5	A-6(5)	CL	100	100	99	60	28	14	124	11
Bt1---- 5 to 22	A-6(9)	CL	100	100	99	66	33	17	115	14
Bt2---- 22 to 43	A-6(10)	CL	100	100	99	74	30	16	114	15
Bt3---- 43 to 54	A-6(8)	CL	100	100	99	58	33	18	113	15
Bt4---- 54 to 65	A-6(4)	CL	100	100	99	57	27	12	113	15
Kinston:										
(S86AL-107-2)										
A1----- 0 to 5	A-7-5(19)	ML	100	100	99	90	49	18	86	27
A2----- 5 to 8	A-7-6(20)	ML	100	100	99	90	46	17	89	20
Cg1---- 8 to 25	A-4(3)	CL-ML	100	100	99	82	24	7	116	14
Cg2---- 25 to 45	A-6(13)	CL	100	100	99	91	33	15	108	16
Cg3---- 45 to 55	A-6(13)	CL	100	100	99	85	32	15	110	16
Cg4---- 55 to 65	A-2-4(0)	SM	100	100	99	27	NP	NP	113	11
Savannah:										
(S83AL-107-2)										
Ap----- 0 to 7	A-4(0)	CL-ML	100	99	99	67	NP	NP	110	12
Bt1---- 12 to 19	A-4(1)	CL-ML	100	100	100	74	20	5	113	13
Btx1--- 26 to 37	A-4(6)	CL	100	100	100	71	30	10	111	14
Sucarnoochee:										
(S85AL-107-11)										
Ap----- 0 to 10	A-7-6(26)	CH	100	100	99	86	52	28	97	19
AB----- 10 to 23	A-7-6(32)	CH	100	100	99	91	58	31	---	---
Bssg1-- 23 to 36	A-7-6(31)	CH	100	100	99	79	62	37	---	---
Bssg2-- 36 to 65	A-7-6(33)	CH	100	100	99	82	61	38	---	---

Table 21.--Classification of the Soils

Soil name	Family or higher taxonomic class
Annemaine	Fine, mixed, semiactive, thermic Aquic Hapludults
Bama	Fine-loamy, siliceous, subactive, thermic Typic Paleudults
Bigbee	Thermic, coated Typic Quartzipsamments
Cahaba	Fine-loamy, siliceous, semiactive, thermic Typic Hapludults
Columbus	Fine-loamy, siliceous, semiactive, thermic Aquic Hapludults
Faunsdale	Fine, smectitic, thermic Aquic Hapluderts
Fluvaquents	Typic Fluvaquents
Iuka	Coarse-loamy, siliceous, active, acid, thermic Aquic Udifluvents
Kinston	Fine-loamy, siliceous, semiactive, acid, thermic Typic Fluvaquents
Lucedale	Fine-loamy, siliceous, subactive, thermic Rhodic Paleudults
Luverne	Fine, mixed, semiactive, thermic Typic Hapludults
Mantachie	Fine-loamy, siliceous, active, acid, thermic Aeric Endoaquepts
Mooreville	Fine-loamy, siliceous, active, thermic Fluvaquentic Dystrochrepts
Myatt	Fine-loamy, siliceous, active, thermic Typic Endoaquults
Ochlockonee	Coarse-loamy, siliceous, active, acid, thermic Typic Udifluvents
Okolona	Fine, smectitic, thermic Oxyaquic Hapluderts
Riverview	Fine-loamy, mixed, active, thermic Fluventic Dystrochrepts
Sacul	Fine, mixed, active, thermic Aquic Hapludults
Savannah	Fine-loamy, siliceous, semiactive, thermic Typic Fragiudults
Smithdale	Fine-loamy, siliceous, subactive, thermic Typic Hapludults
Sucarnoochee	Fine, smectitic, thermic Chromic Epiaquerts
Sumter	Fine-silty, carbonatic, thermic Rendollic Eutrochrepts
Udorthents	Typic Udorthents
Una	Fine, mixed, active, acid, thermic Typic Epiaquepts
Urbo	Fine, mixed, active, acid, thermic Vertic Epiaquepts
Vaiden	Very-fine, smectitic, thermic Aquic Dystruderts

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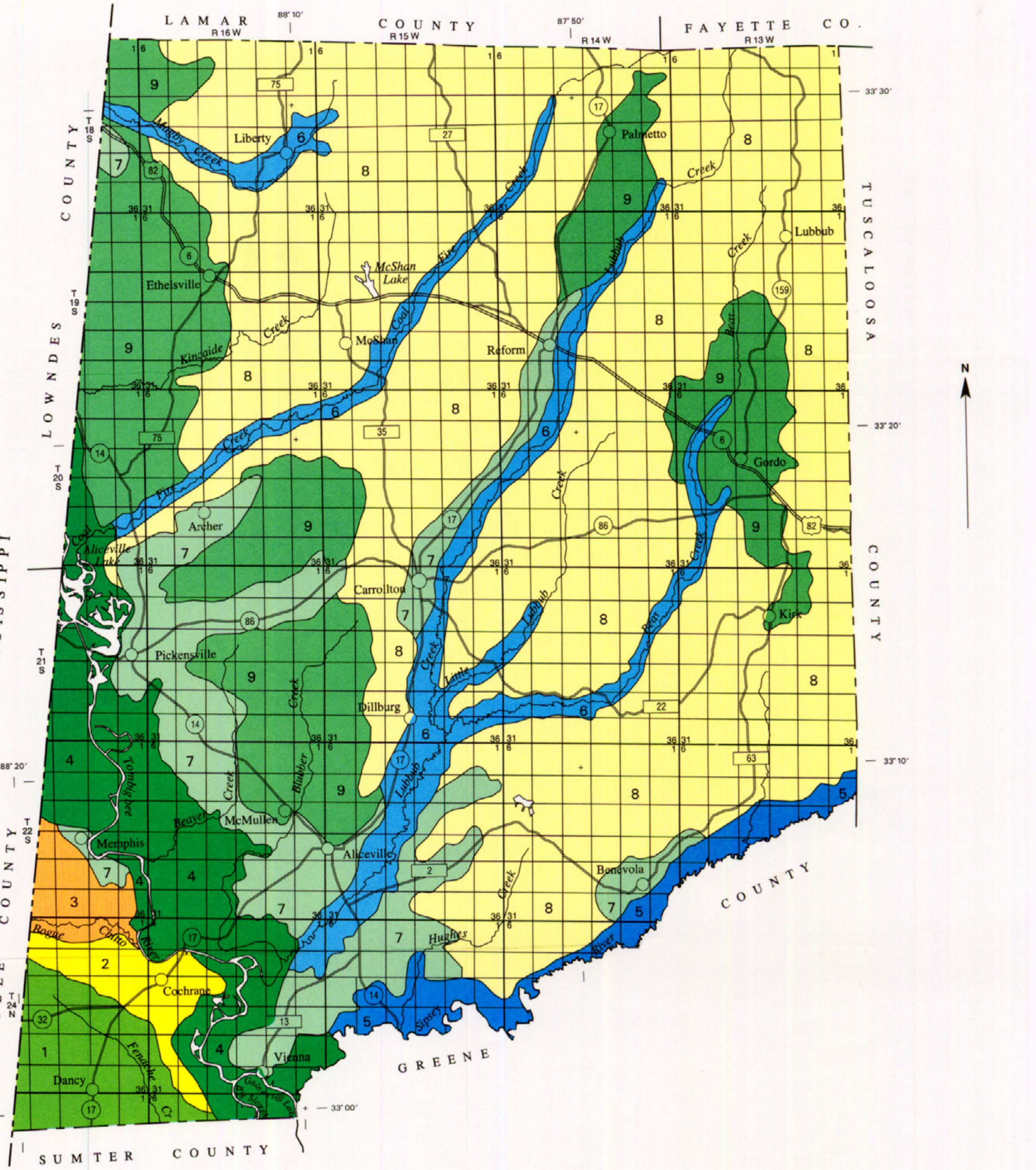


SOIL LEGEND*

1	Vaiden-Okolona-Sucarnoochee
2	Sumter-Sucarnoochee-Faunsdale
3	Vaiden-Sucarnoochee
4	Cahaba-Urbo-Una
5	Myatt-Columbus-Ochlockonee
6	Kinston-Mantachie-Cahaba
7	Savannah-Bama-Smithdale
8	Smithdale-Luverne-Sacul
9	Smithdale-Luverne-Savannah

*The units on this legend are described in the text under the heading "General Soil Map Units."

Compiled 1997

Each area outlined on this map consists of more than one kind of soil. The map is thus meant for general planning rather than a basis for decisions on the use of specific tracts.

SECTIONALIZED TOWNSHIP

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

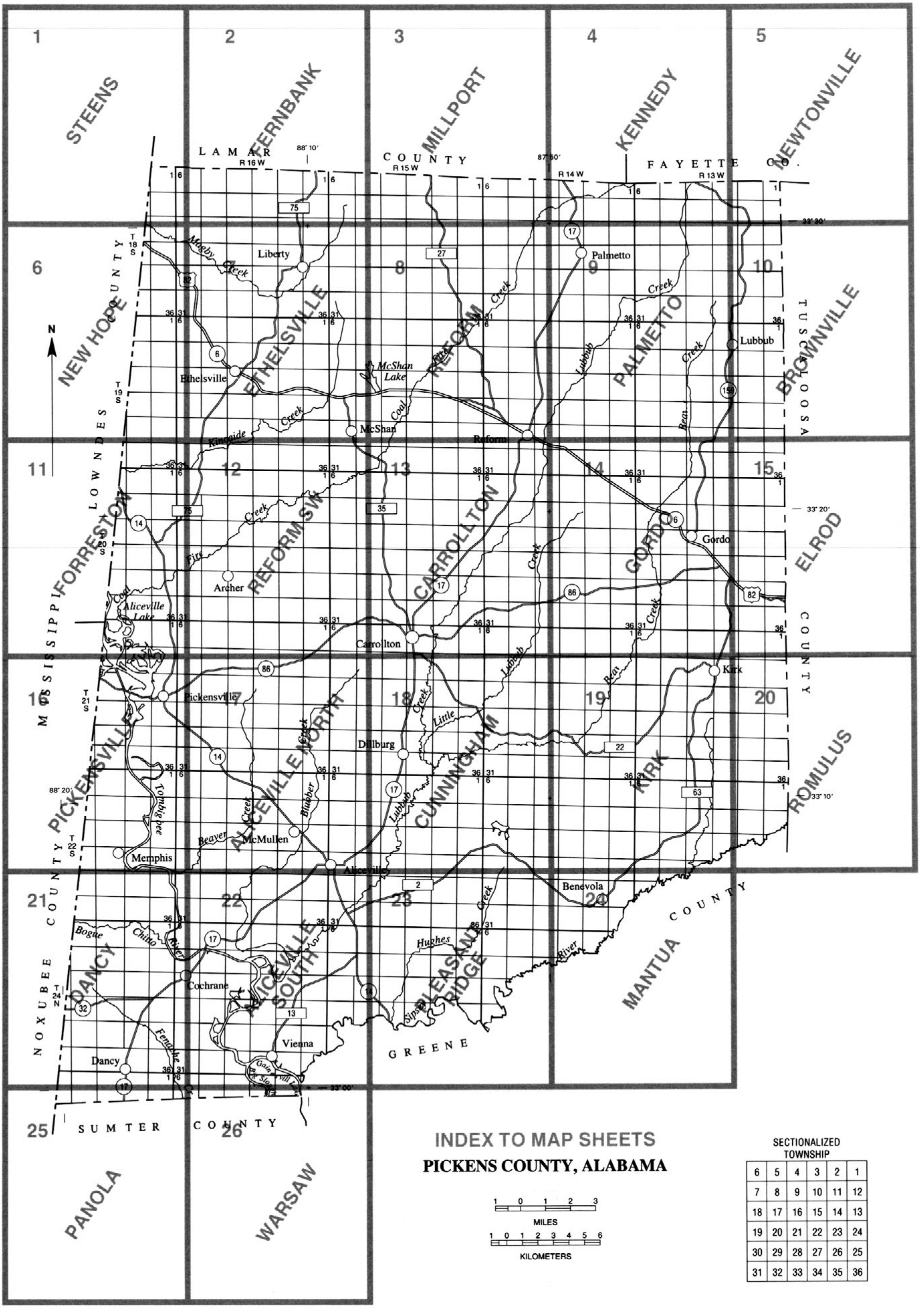
UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
In cooperation with the
ALABAMA AGRICULTURAL EXPERIMENT STATION and the
ALABAMA SOIL and WATER CONSERVATION COMMITTEE

GENERAL SOIL MAP

PICKENS COUNTY, ALABAMA

1 0 1 2 3
MILES

1 0 1 2 3 4 5 6
KILOMETERS



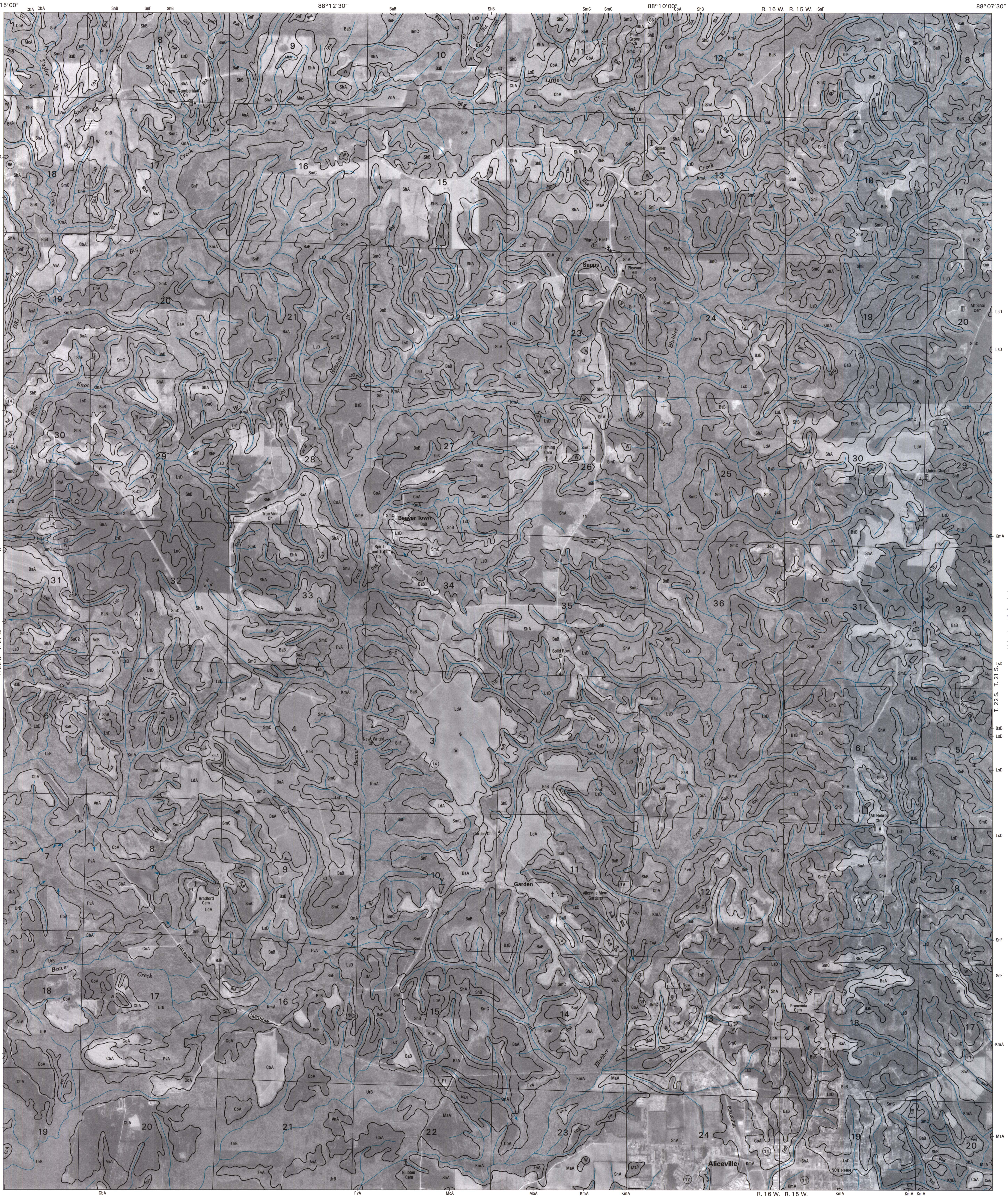
PICKENS COUNTY, ALABAMA

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

PICKENS COUNTY, ALABAMA
ALICEVILLE NORTH QUADRANGLE
SHEET NUMBER 17 OF 26

(Joins sheet 12, Reform SW)

88°15'00" 88°12'30" 88°10'00" 88°07'30"
33°15'00"



(Joins sheet 22, Aliceville South)

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1992 aerial photography. Hydrography and culture information were acquired from U.S. Geological Survey data; therefore, some features may not align exactly with base imagery.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
KILOMETERS

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
MILES

1	2	3
4		5
6	7	8

1 FORRESTON
2 REFORM SW
3 CARROLLTON
4 PICKENSVILLE
5 CUNNINGHAM
6 DANCY
7 ALICEVILLE SOUTH
8 PLEASANT RIDGE

INDEX TO ADJOINING 7.5 MAPS

ALICEVILLE NORTH, ALABAMA
7.5 MINUTE SERIES
SHEET NUMBER 17 OF 26

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

PICKENS COUNTY, ALABAMA
ALICEVILLE SOUTH QUADRANGLE
SHEET NUMBER 22 OF 26

(Joins sheet 26, Warsaw)

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1992 aerial photography. Hydrography and culture information were acquired from U.S. Geological Survey data; therefore, some features may not align exactly with base imagery.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

KILOMETERS: 1 0 1

FEET: 1000 0 1000 2000 3000 4000 5000 6000 7000

MILES: 1 0 1

1	2	3
4		5
6	7	8

1 PICKENSVILLE
2 ALICEVILLE NORTH
3 CUNNINGHAM
4 DANCY
5 PLEASANT RIDGE
6 PANOLA
7 WARSAW
8 WEST GREENE

INDEX TO ADJOINING 7.5 MAPS

ALICEVILLE SOUTH, ALABAMA
7.5 MINUTE SERIES
SHEET NUMBER 22 OF 26

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

PICKENS COUNTY, ALABAMA
BROWNVILLE QUADRANGLE
SHEET NUMBER 10 OF 26

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1992 aerial photography. Hydrography and culture information were acquired from U.S. Geological Survey data; therefore, some features may not align exactly with base imagery.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

KILOMETERS 1 0 1

FEET 1000 0 1000 2000 3000 4000 5000 6000 7000

MILES 1 0 1

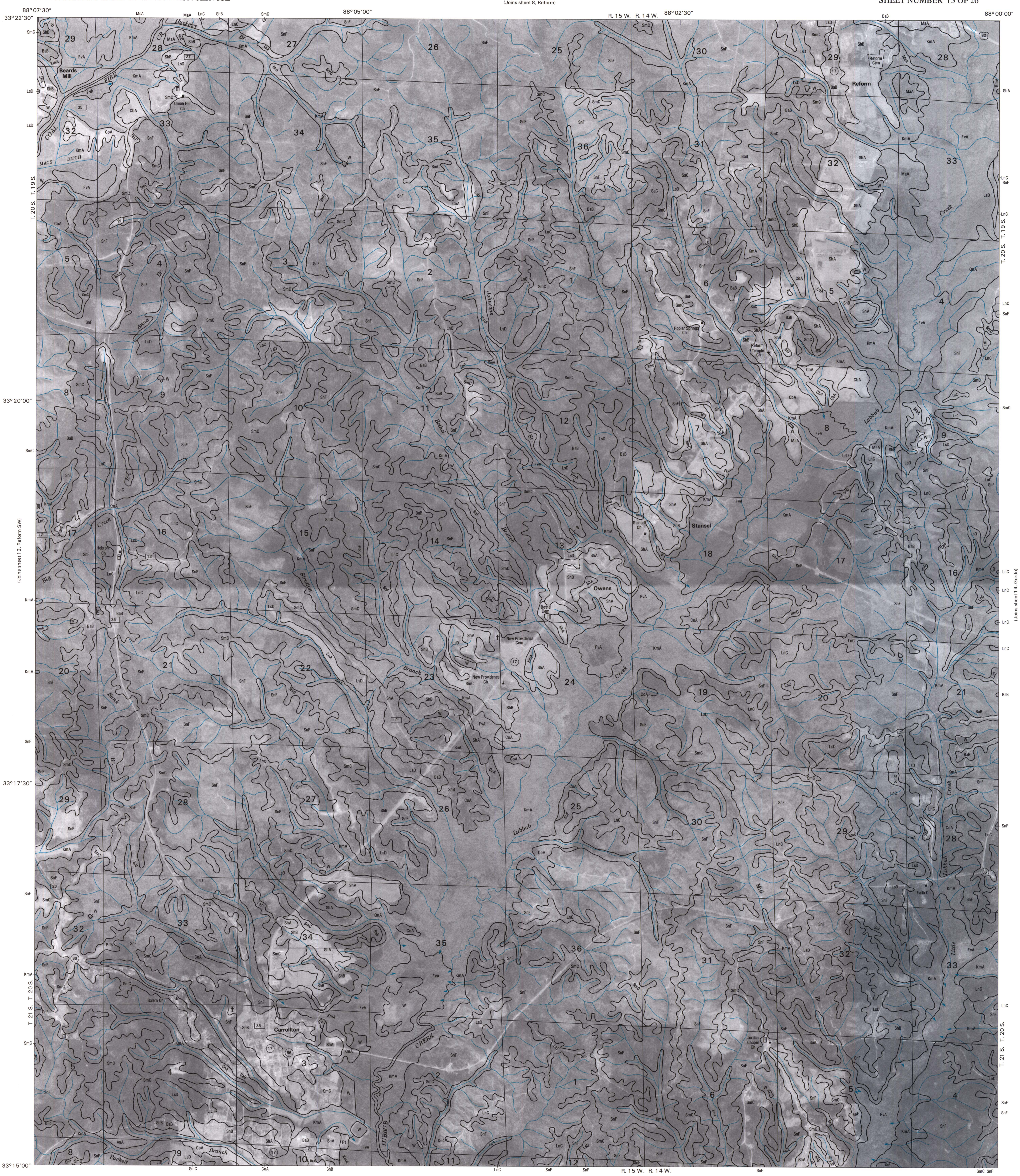
1	2	3
4		5
6	7	8

1 KENNEDY
2 NEWTONVILLE
3 NEW LEXINGTON
4 PALMETTO
5 GIN CREEK
6 GORDO
7 ELROD
8 LAKE LURLEEN

INDEX TO ADJOINING 7.5 MAPS

BROWNVILLE, ALABAMA
7.5 MINUTE SERIES
SHEET NUMBER 10 OF 26

(Joins sheet 8, Reform)



(Joins sheet 18, Cunningham)

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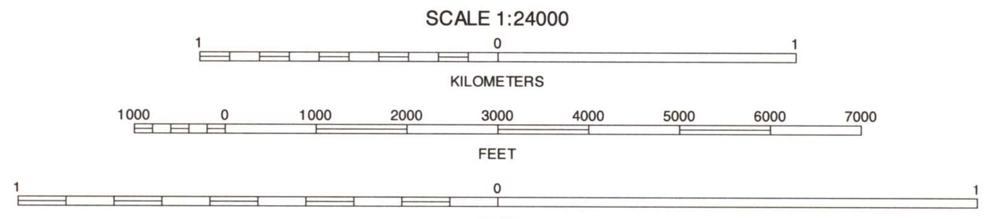
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

QUADRANGLE LOCATION

SCALE 1:24000

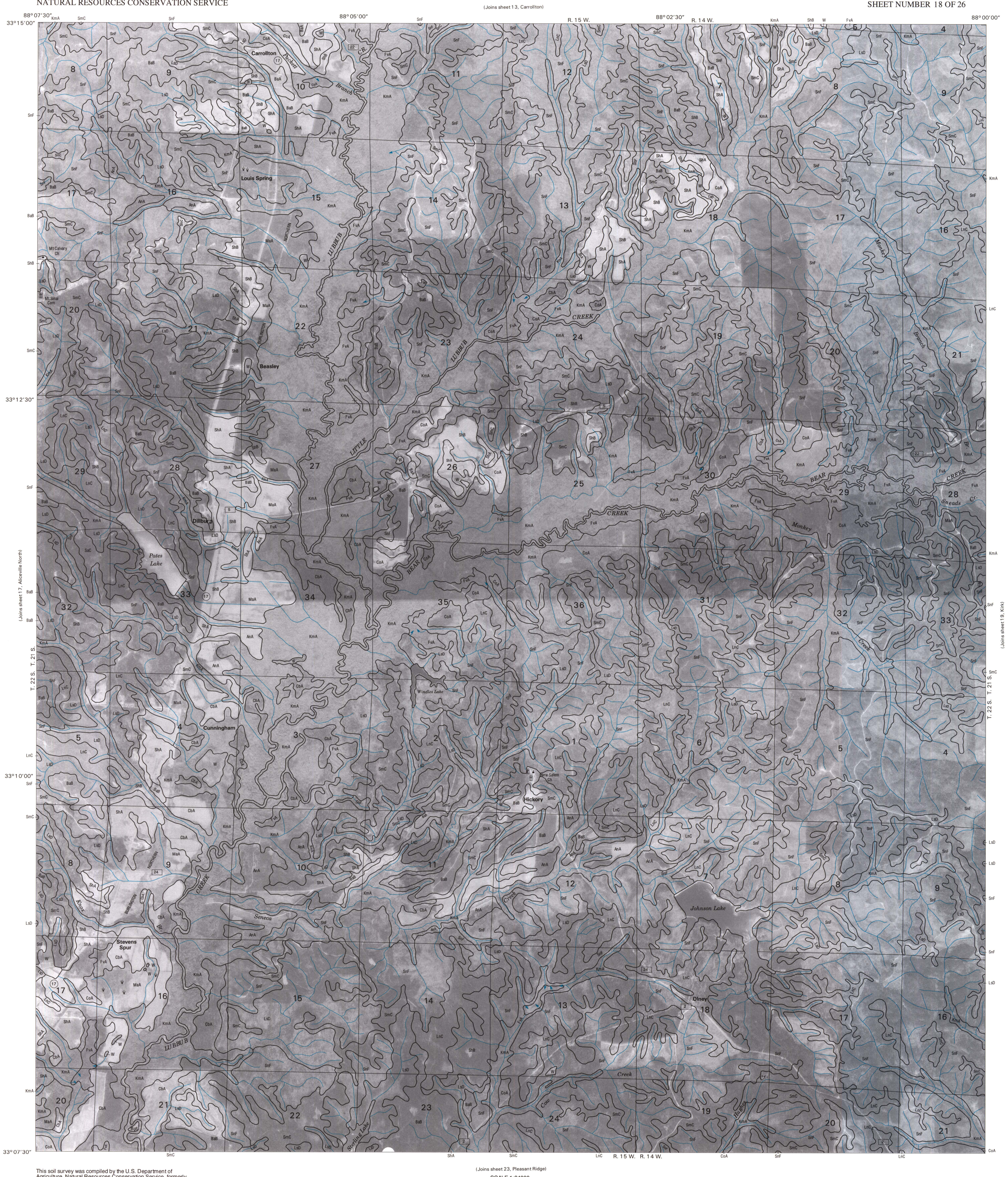


1	2	3
4		5
6	7	8

1 ETHELSVILLE
2 REFORM
3 PALMETTO
4 REFORM SW
5 GORDO
6 ALICEVILLE NORTH
7 CUNNINGHAM
8 KIRK

INDEX TO ADJOINING 7.5 MAPS

CARROLLTON, ALABAMA
7.5 MINUTE SERIES
SHEET NUMBER 13 OF 26



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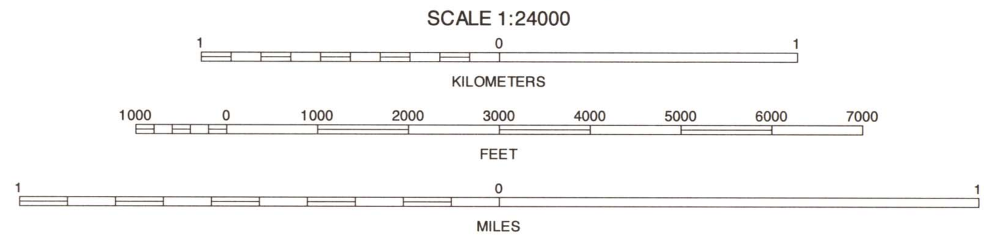

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1992 aerial photography. Hydrography and culture information were acquired from U.S. Geological Survey data; therefore, some features may not align exactly with base imagery.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

QUADRANGLE LOCATION

1	2	3
4		5
6	7	8

1 REFORM SW
2 CARROLLTON
3 GORDO
4 ALICEVILLE NORTH
5 KIRK
6 ALICEVILLE SOUTH
7 PLEASANT RIDGE
8 MANTUA

INDEX TO ADJOINING 7.5 MAPS

CUNNINGHAM, ALABAMA
7.5 MINUTE SERIES
SHEET NUMBER 18 OF 26

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

PICKENS COUNTY, ALABAMA
DANCY QUADRANGLE
SHEET NUMBER 21 OF 26

(Joins sheet 16, Pickensville)

(Joins sheet 25, Panola)

SCALE 1:24000

KILOMETERS

FEET

MILES

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1992 aerial photography. Hydrography and culture information were acquired from U.S. Geological Survey data; therefore, some features may not align exactly with base imagery.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

1 CLIFTONVILLE
2 PICKENSVILLE
3 ALICEVILLE NORTH
4 MCLEOD
5 ALICEVILLE SOUTH
6 PAULETTE
7 PANOLA
8 WARSAW

INDEX TO ADJOINING 7.5 MAPS

DANCY, ALABAMA
7.5 MINUTE SERIES
SHEET NUMBER 21 OF 26

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

PICKENS COUNTY, ALABAMA
ELROD QUADRANGLE
SHEET NUMBER 15 OF 26

(Joins sheet 10, Brownville)

(Joins sheet 20, Romulus)

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1992 aerial photography. Hydrography and culture information were acquired from U.S. Geological Survey data; therefore, some features may not align exactly with base imagery.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

KILOMETERS

FEET

MILES

1	2	3
4		5
6	7	8

1 PALMETTO
2 BROWNVILLE
3 GIN CREEK
4 GORDO
5 LAKE LURLEEN
6 KIRK
7 ROMULUS
8 COKER

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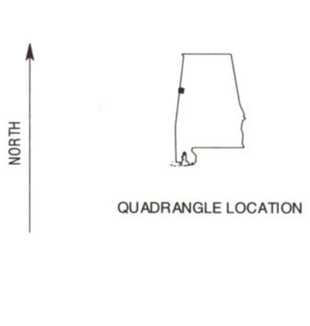
ELROD, ALABAMA
7.5 MINUTE SERIES
SHEET NUMBER 15 OF 26

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1992 aerial photography. Hydrography and culture information were acquired from U.S. Geological Survey data; therefore, some features may not align exactly with base imagery.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



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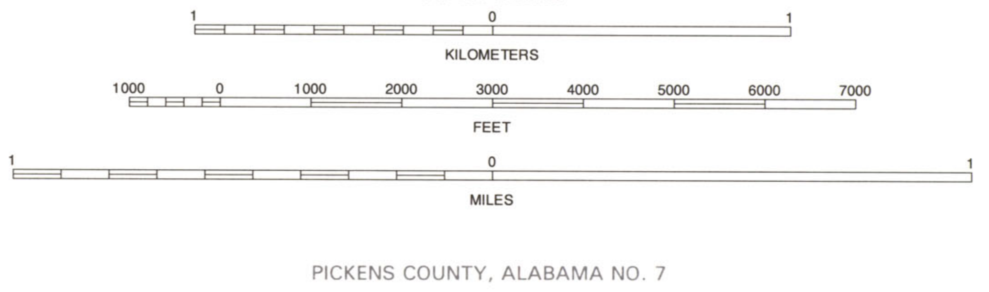

1	2	3
4		5
6	7	8

1 STEENS
2 FERNBANK
3 MILLPORT
4 NEW HOPE
5 REFORM
6 FORRESTON
7 REFORM SW
8 CARROLLTON

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ETHELSVILLE, ALABAMA
7.5 MINUTE SERIES
SHEET NUMBER 7 OF 26

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

PICKENS COUNTY, ALABAMA
FERNBANK QUADRANGLE
SHEET NUMBER 2 OF 26

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1992 aerial photography. Hydrography and culture information were acquired from U.S. Geological Survey data; therefore, some features may not align exactly with base imagery.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

KILOMETERS

FEET

MILES

1	2	3
4		5
6	7	8

1 CALEDONIA
2 MILLPORT NW
3 HIGHTOGY
4 STEENS
5 MILLPORT
6 NEW HOPE
7 ETHELSVILLE
8 REFORM

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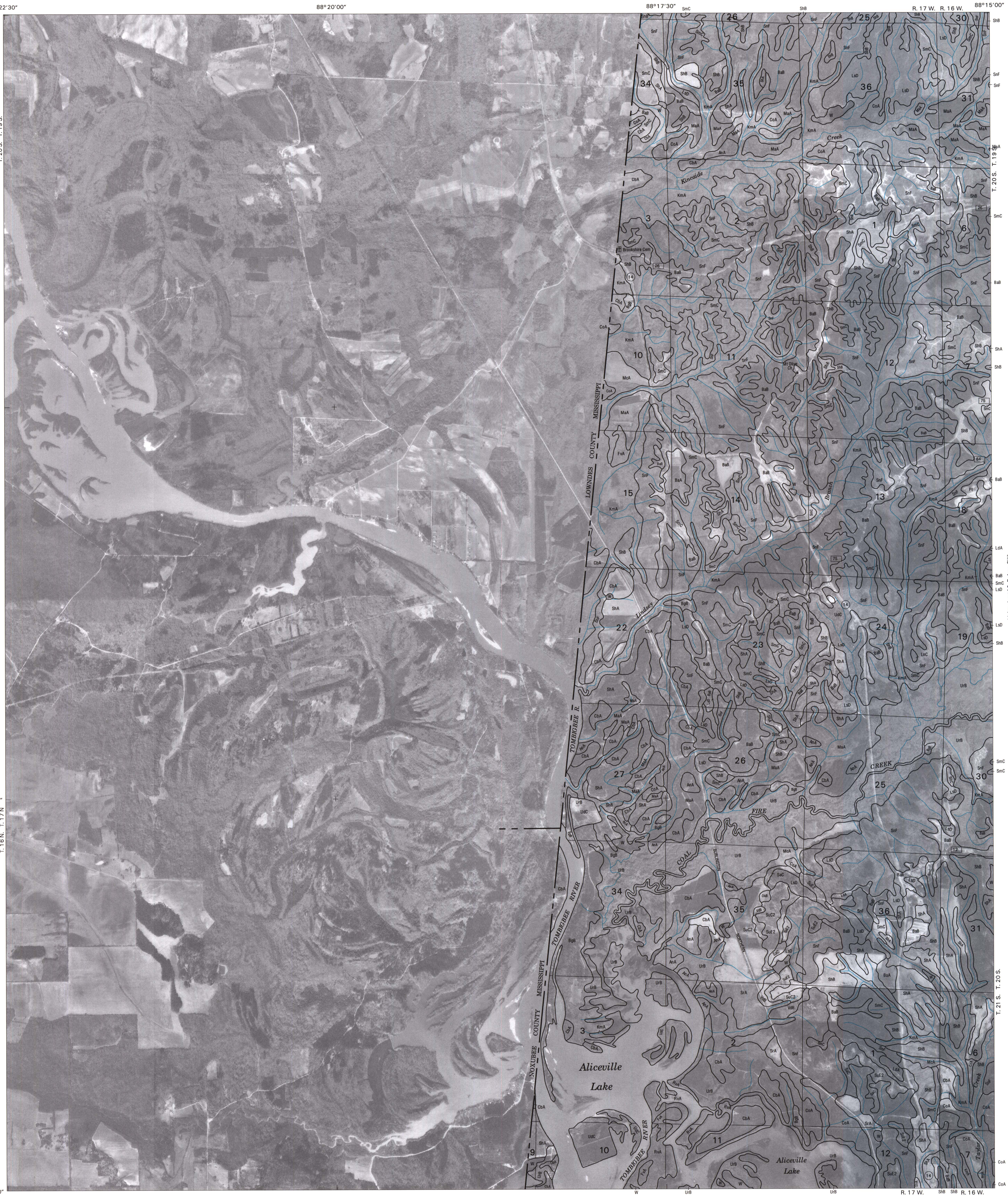
FERNBANK, ALABAMA
7.5 MINUTE SERIES
SHEET NUMBER 2 OF 26

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

(Joins sheet 6, New Hope)



(Joins sheet 12, Reform SW)

(Joins sheet 16, Pickensville)

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1992 aerial photography. Hydrography and culture information were acquired from U.S. Geological Survey data; therefore, some features may not align exactly with base imagery.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

KILOMETERS

FEET

MILES

1	2	3
4		5
6	7	8

1 COLUMBUS SOUTH
2 NEW HOPE
3 ETHELSVILLE
4 TRINITY
5 REFORM SW
6 CLIFTONVILLE
7 PICKENSVILLE
8 ALICEVILLE NORTH

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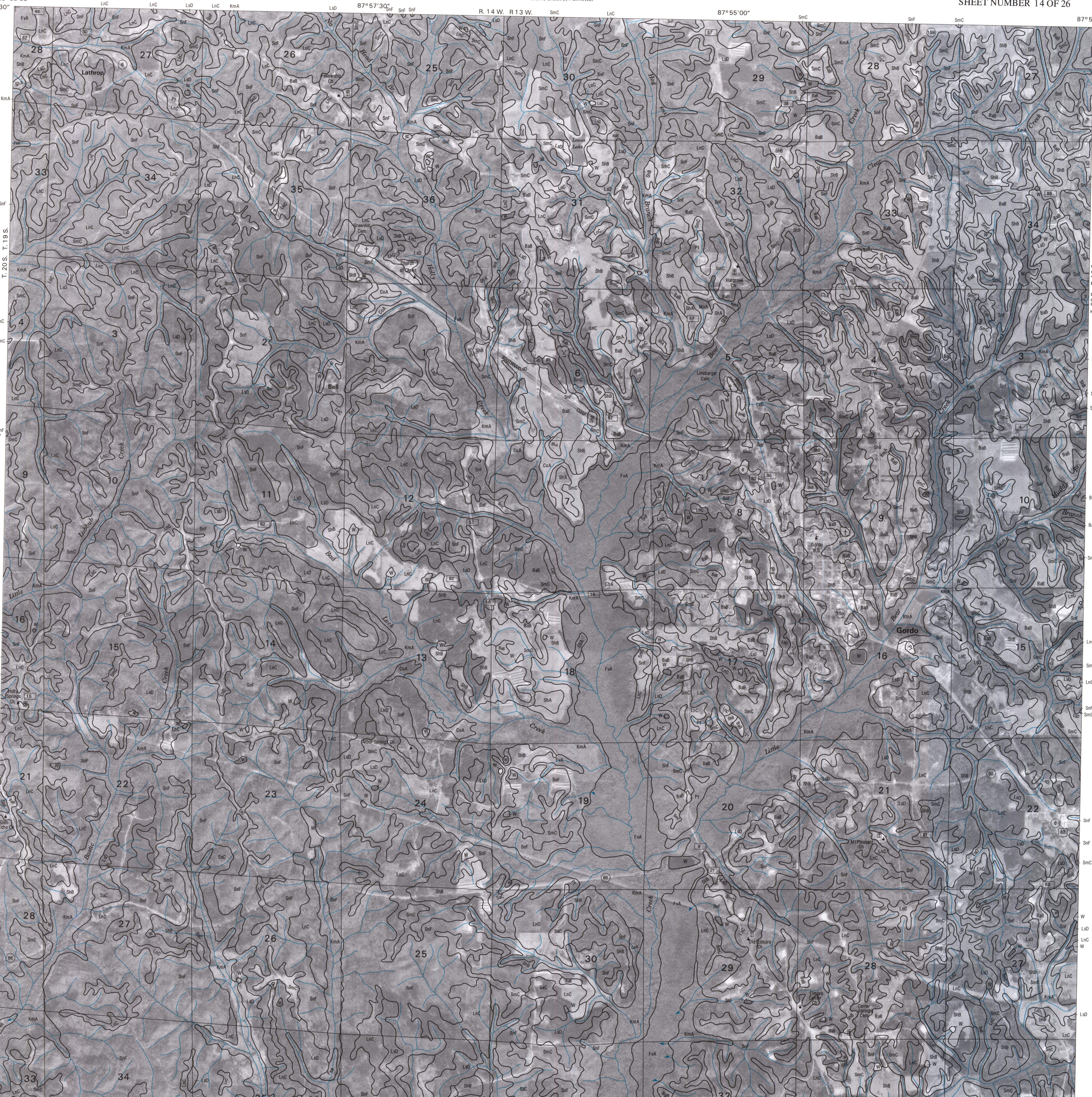
FORRESTON, ALABAMA
7.5 MINUTE SERIES
SHEET NUMBER 11 OF 26

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

PICKENS COUNTY, ALABAMA
GORDO QUADRANGLE
SHEET NUMBER 14 OF 26

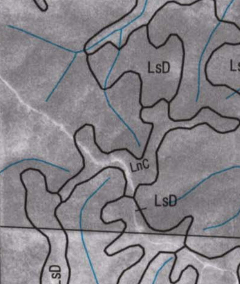


R. 14 W. R 13 W.

(Joins sheet 19, Kirk)

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1992 aerial photography. Hydrography and culture information were acquired from U.S. Geological Survey data; therefore, some features may not align exactly with base imagery.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



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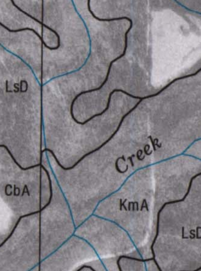

1 REFORM
2 PALMETTO
3 BROWNVILLE
4 CARROLLTON
5 ELROD
6 CUNNINGHAM
7 KIRK
8 ROMULUS

INDEX TO ADJOINING 7.5 MAPS

GORDO, ALABAMA
7.5 MINUTE SERIES
SHEET NUMBER 14 OF 26

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

PICKENS COUNTY, ALABAMA
KENNEDY QUADRANGLE
SHEET NUMBER 4 OF 26

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1992 aerial photography. Hydrography and culture information were acquired from U.S. Geological Survey data; therefore, some features may not align exactly with base imagery.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

KILOMETERS

FEET

MILES

1	2	3	1 HIGHTOGY 2 BELK 3 FAYETTE
4		5	4 MILLPORT 5 NEWTONVILLE
6	7	8	6 REFORM 7 PALMETTO 8 BROWNVILLE

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KENNEDY, ALABAMA
7.5 MINUTE SERIES
SHEET NUMBER 4 OF 26

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

PICKENS COUNTY, ALABAMA
KIRK QUADRANGLE
SHEET NUMBER 19 OF 26

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1992 aerial photography. Hydrography and culture information were acquired from U.S. Geological Survey data; therefore, some features may not align exactly with base imagery.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

KILOMETERS

FEET

MILES

1 CARROLLTON
2 GORDO
3 ELROD
4 CUNNINGHAM
5 ROMULUS
6 PLEASANT RIDGE
7 MANTUA
8 RALPH

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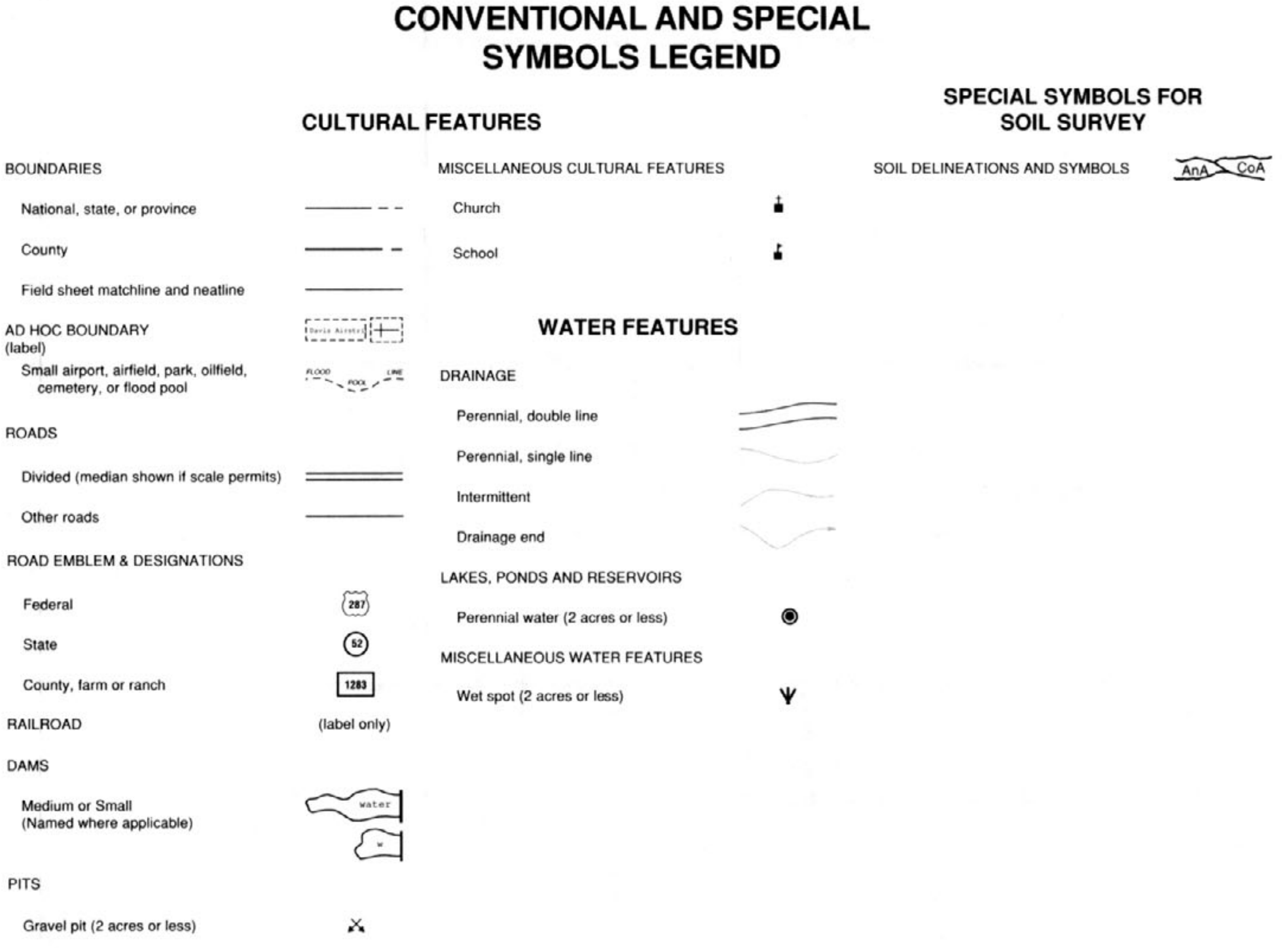
KIRK, ALABAMA
7.5 MINUTE SERIES
SHEET NUMBER 19 OF 26

SOIL LEGEND

Soil map symbols and map unit names are alphabetical. The first letter, always a capital, is the initial letter of the soil name. The second letter is a small letter and identifies either the second name taxon in the map unit or is used for alphabetical purposes. The third letter, if used, is always a capital and indicates the class of slope. The fourth character, if used, is always a number and indicates an eroded phase of the mapping unit.

SYMBOL	NAME
AnA	Annemaine loam, 0 to 2 percent slopes, occasionally flooded
BaA	Bama loam, 0 to 2 percent slopes
BaB	Bama sandy loam, 2 to 5 percent slopes
BgB	Bigbee loamy sand, 0 to 5 percent slopes, occasionally flooded
CbA	Cahaba sandy loam, 0 to 2 percent slopes, occasionally flooded
CoA	Columbus loam, 0 to 2 percent slopes, occasionally flooded
FaA	Faunsdale silty clay, 0 to 1 percent slopes
FaB	Faunsdale silty clay, 1 to 3 percent slopes
FvA	Fluvaquents, ponded
KmA	Kinston-Mantachie complex, 0 to 1 percent slopes, frequently flooded
LdA	Lucedale loam, 0 to 2 percent slopes
LnC	Luverne sandy loam, 5 to 8 percent slopes
LsD	Luverne-Smithdale complex, 8 to 15 percent slopes
MaA	Myatt fine sandy loam, 0 to 1 percent slopes, occasionally flooded
McA	Myatt-Columbus complex, 0 to 2 percent slopes, occasionally flooded
OcA	Ochlockonee-Kinston-Iuka complex, 0 to 2 percent slopes, frequently flooded
OkA	Okolona silty clay, 0 to 1 percent slopes
OkB	Okolona silty clay, 1 to 3 percent slopes
Pt	Pits
RvA	Riverview loam, 0 to 2 percent slopes, frequently flooded
SaC	Sacul sandy loam, 2 to 8 percent slopes
ShA	Savannah loam, 0 to 2 percent slopes
ShB	Savannah loam, 2 to 5 percent slopes
SmC	Smithdale sandy loam, 5 to 8 percent slopes
SnF	Smithdale-Luverne-Sacul complex, 15 to 35 percent slopes
SrA	Sucarnoochee silty clay, 0 to 1 percent slopes, frequently flooded
SuC2	Sumter silty clay, 1 to 5 percent slopes, eroded
SuE2	Sumter silty clay loam, 5 to 12 percent slopes, eroded
UdC	Udorthents, dredged
UrB	Urbo-Mooreville-Una complex, gently undulating, frequently flooded
VdA	Vaiden silty clay, 0 to 1 percent slopes
VdB	Vaiden silty clay, 1 to 3 percent slopes

CONVENTIONAL AND SPECIAL SYMBOLS LEGEND



UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

PICKENS COUNTY, ALABAMA
MANTUA QUADRANGLE
SHEET NUMBER 24 OF 26

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1992 aerial photography. Hydrography and culture information were acquired from U.S. Geological Survey data; therefore, some features may not align exactly with base imagery.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

KILOMETERS

FEET

MILES

1	2	3
4		5
6	7	8

1 CUNNINGHAM
2 KIRK
3 ROMULUS
4 PLEASANT RIDGE
5 RALPH
6 WEST GREENE
7 UNION
8 KNOXVILLE

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MANTUA, ALABAMA
7.5 MINUTE SERIES
SHEET NUMBER 24 OF 26

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

PICKENS COUNTY, ALABAMA
MILLPORT QUADRANGLE
SHEET NUMBER 3 OF 26

(Joins sheet 8, Reform)

SCALE 1:24000

KILOMETERS

FEET

MILES

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

1	2	3
4		5
6	7	8

1 MILLPORT NW
2 HIGHTOGY
3 BELK
4 FERNBANK
5 KENNEDY
6 ETHELSVILLE
7 REFORM
8 PALMETTO

INDEX TO ADJOINING 7.5 MAPS

MILLPORT, ALABAMA
7.5 MINUTE SERIES
SHEET NUMBER 3 OF 26

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

PICKENS COUNTY, ALABAMA
NEW HOPE QUADRANGLE
SHEET NUMBER 6 OF 26

(Joins sheet 1, Steens)

88°22'30" R. 18 W. R. 17 W. 88°20'00" 88°17'30" R. 17 W. R. 16 W. 88°15'00"

33°30'00"

33°27'30"

33°25'00"

33°22'30" R. 18 W. R. 17 W. R. 17 W. R. 16 W.

(Joins sheet 11, Forreston)

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1992 aerial photography. Hydrography and culture information were acquired from U.S. Geological Survey data; therefore, some features may not align exactly with base imagery.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

KILOMETERS

FEET

MILES

1	2	3
4		5
6	7	8

1 MOUNT CARMEL
2 COLUMBUS NORTH
3 STEENS
4 COLUMBUS SOUTH
5 ETHELSVILLE
6 TRINITY
7 FORRESTON
8 REFORM SW

INDEX TO ADJOINING 7.5 MAPS

NEW HOPE, ALABAMA
7.5 MINUTE SERIES
SHEET NUMBER 6 OF 26

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

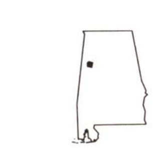
PICKENS COUNTY, ALABAMA
NEWTONVILLE QUADRANGLE
SHEET NUMBER 5 OF 26

(Joins sheet 10, Brownville)

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1992 aerial photography. Hydrography and culture information were acquired from U.S. Geological Survey data; therefore, some features may not align exactly with base imagery.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH



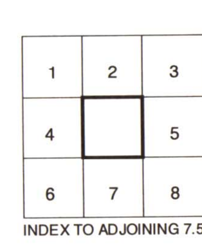
QUADRANGLE LOCATION

SCALE 1:24000

KILOMETERS

FEET

MILES



1 BELK
2 FAYETTE
3 BANKSTON
4 KENNEDY
5 NEW LEXINGTON
6 PALMETTO
7 BROWNVILLE
8 GIN CREEK

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NEWTONVILLE, ALABAMA
7.5 MINUTE SERIES
SHEET NUMBER 5 OF 26

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

PICKENS COUNTY, ALABAMA
PALMETTO QUADRANGLE
SHEET NUMBER 9 OF 26

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1992 aerial photography. Hydrography and culture information were acquired from U.S. Geological Survey data; therefore, some features may not align exactly with base imagery.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

KILOMETERS

FEET

MILES

1	2	3	1 MILLPORT
4		5	2 KENNEDY
6	7	8	3 NEWTONVILLE

4 REFORM
5 BROWNVILLE
6 CARROLLTON
7 GORDO
8 ELROD

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PALMETTO, ALABAMA
7.5 MINUTE SERIES
SHEET NUMBER 9 OF 26

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

PICKENS COUNTY, ALABAMA
PANOLA QUADRANGLE
SHEET NUMBER 25 OF 26

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1992 aerial photography. Hydrography and culture information were acquired from U.S. Geological Survey data; therefore, some features may not align exactly with base imagery.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

KILOMETERS 1 0 1

FEET 1000 0 1000 2000 3000 4000 5000 6000 7000

MILES 1 0 1

1	2	3
4		5
6	7	8

1 MCLEOD
2 DANCY
3 ALICEVILLE SOUTH
4 PAULETTE
5 WARSAW
6 SCOOBA
7 GEIGER
8 GAINESVILLE

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PANOLA, ALABAMA
7.5 MINUTE SERIES
SHEET NUMBER 25 OF 26

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

PICKENS COUNTY, ALABAMA
PICKENSVILLE QUADRANGLE
SHEET NUMBER 16 OF 26

(Joins sheet 11, Forreston)

(Joins sheet 21, Dancy)

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1992 aerial photography. Hydrography and culture information were acquired from U.S. Geological Survey data; therefore, some features may not align exactly with base imagery.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

KILOMETERS

FEET

MILES

1	2	3
4		5
6	7	8

1 TRINITY
2 FORRESTON
3 REFORM SW
4 CLIFTONVILLE
5 ALICEVILLE NORTH
6 MCLEOD
7 'DANCY
8 'ALICEVILLE SOUTH

INDEX TO ADJOINING 7.5 MAPS

PICKENSVILLE, ALABAMA
7.5 MINUTE SERIES
SHEET NUMBER 16 OF 26

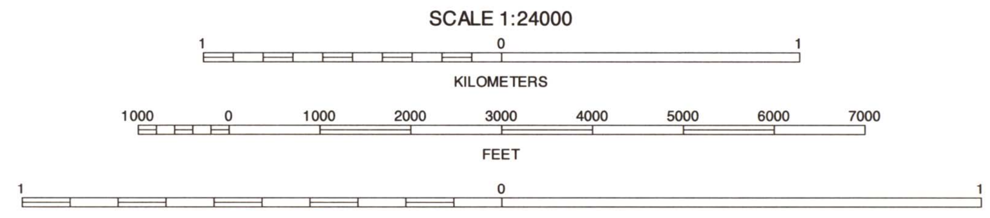
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

PICKENS COUNTY, ALABAMA
PLEASANT RIDGE QUADRANGLE
SHEET NUMBER 23 OF 26

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1992 aerial photography. Hydrography and culture information were acquired from U.S. Geological Survey data; therefore, some features may not align exactly with base imagery.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

SCALE 1:24000



1	2	3
4		5
6	7	8

1 ALICEVILLE NORTH
2 CUNNINGHAM
3 KIRK
4 ALICEVILLE SOUTH
5 MANTUA
6 WARSAW
7 WEST GREENE
8 UNION

INDEX TO ADJOINING 7.5 MAPS

PLEASANT RIDGE, ALABAMA
7.5 MINUTE SERIES
SHEET NUMBER 23 OF 26

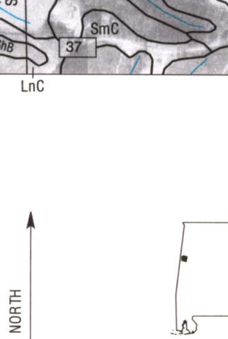
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

PICKENS COUNTY, ALABAMA
REFORM QUADRANGLE
SHEET NUMBER 8 OF 26

(Joins sheet 13, Carrollton)

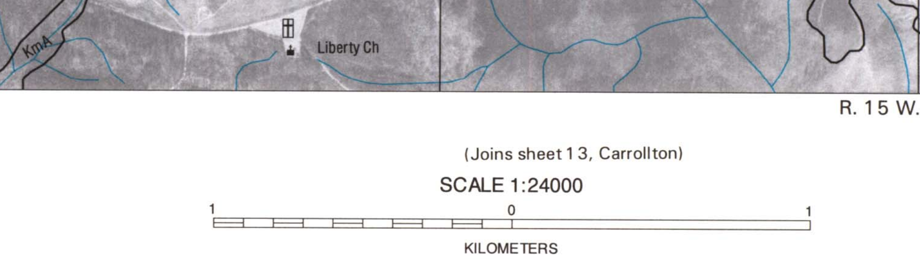
This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1992 aerial photography. Hydrography and culture information were acquired from U.S. Geological Survey data; therefore, some features may not align exactly with base imagery.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUADRANGLE LOCATION

SCALE 1:24000



1	2	3	1 FERNBANK
			2 MILLPORT
			3 KENNEDY
4		5	4 ETHELSVILLE
			5 PALMETTO
			6 REFORM SW
6	7	8	7 CARROLLTON
			8 GORDO

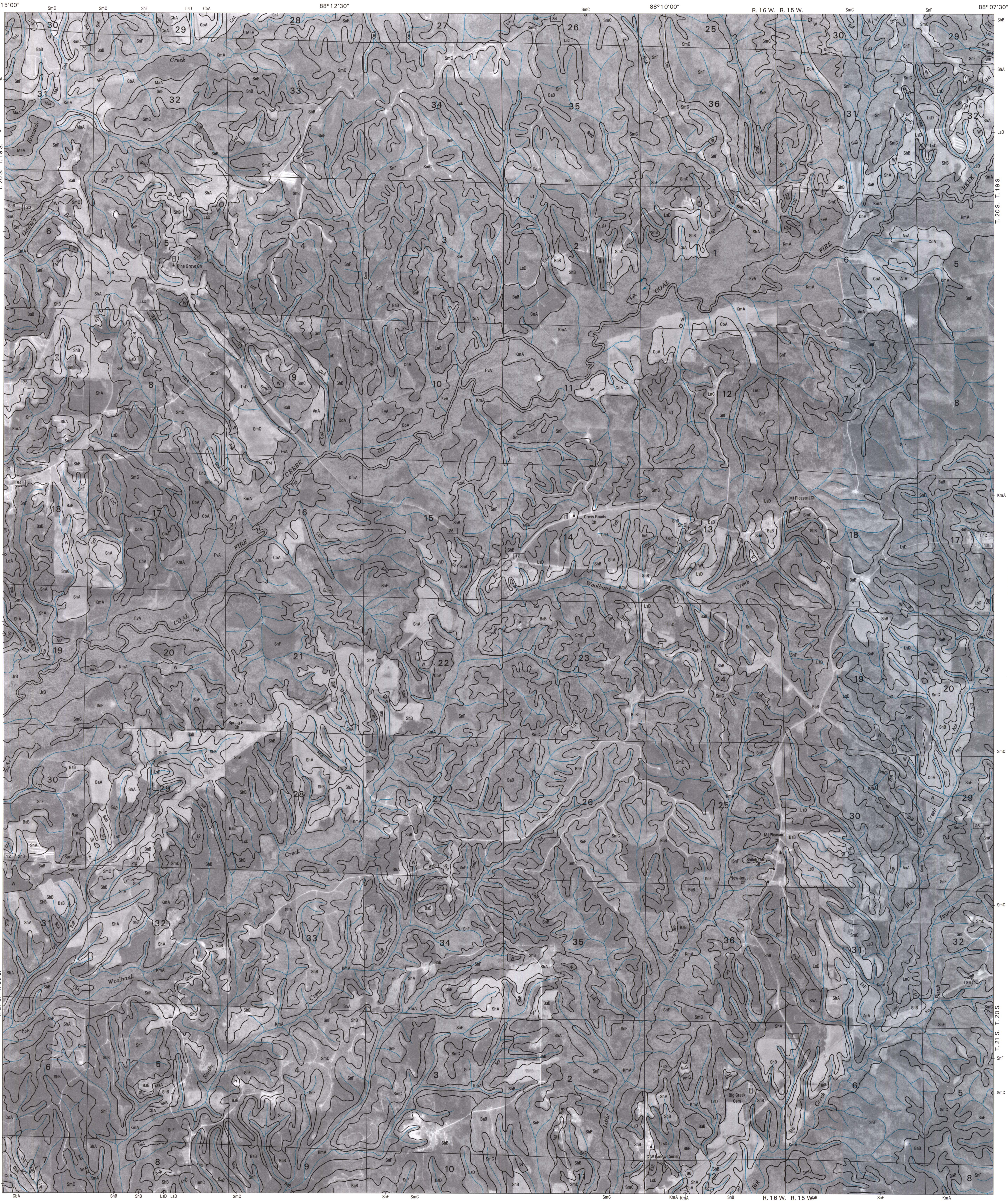
INDEX TO ADJOINING 7.5 MAPS

REFORM, ALABAMA
7.5 MINUTE SERIES
SHEET NUMBER 8 OF 26

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

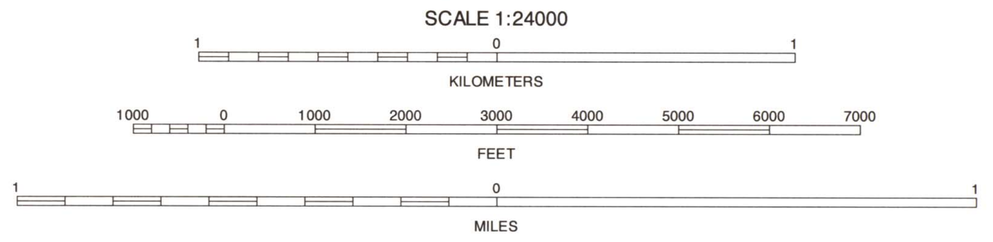
PICKENS COUNTY, ALABAMA
REFORM SW QUADRANGLE
SHEET NUMBER 12 OF 26

(Joins sheet 7, Ethelsville)



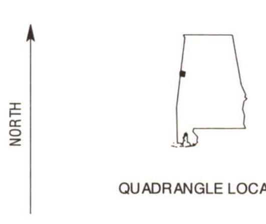
(Joins sheet 17, Aliceville North)

SCALE 1:24000



This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1992 aerial photography. Hydrography and culture information were acquired from U.S. Geological Survey data; therefore, some features may not align exactly with base imagery.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUADRANGLE LOCATION

1	2	3
4		5
6	7	8

1 NEW HOPE
2 ETHELSVILLE
3 REFORM
4 FORRESTON
5 CARROLLTON
6 PICKENSVILLE
7 ALICEVILLE NORTH
8 CUNNINGHAM

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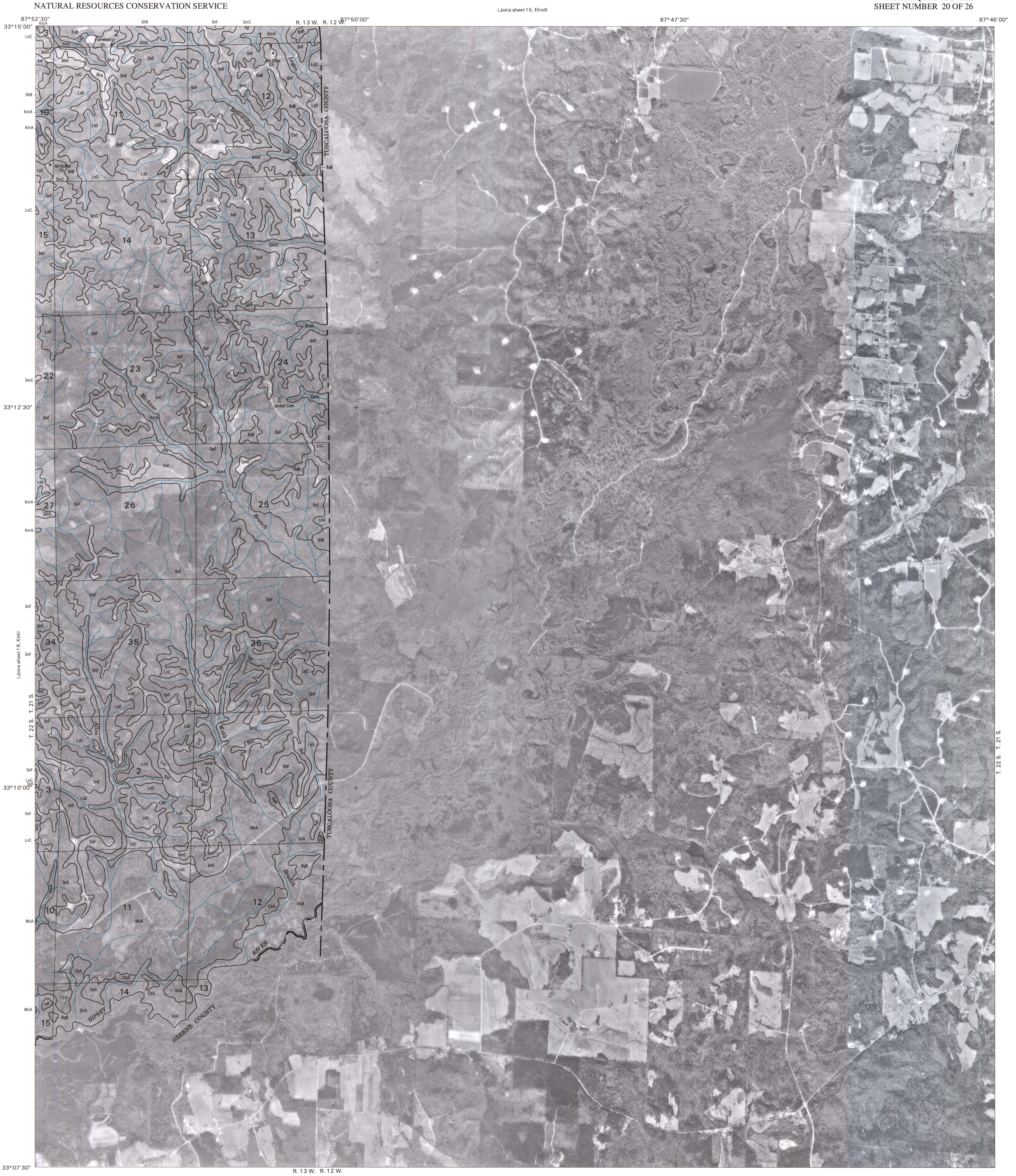
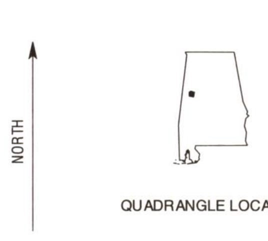
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

PICKENS COUNTY, ALABAMA
ROMULUS QUADRANGLE
SHEET NUMBER 20 OF 26



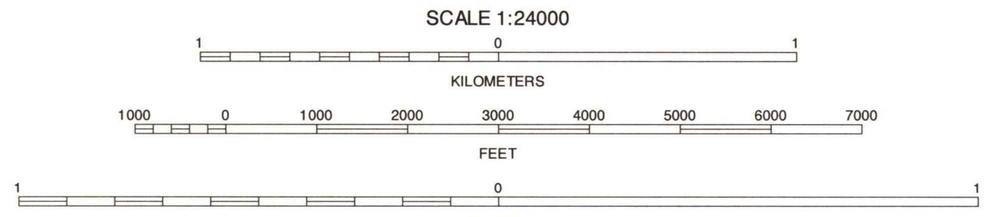
This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1992 aerial photography. Hydrography and culture information were acquired from U.S. Geological Survey data; therefore, some features may not align exactly with base imagery.

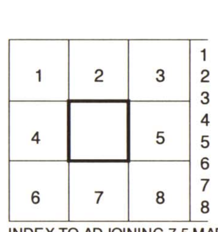
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUADRANGLE LOCATION

SCALE 1:24000





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UNITED STATES
DEPARTMENT OF AGRICULTURE
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PICKENS COUNTY, ALABAMA
STEENS QUADRANGLE
SHEET NUMBER 1 OF 26

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1992 aerial photography. Hydrography and culture information were acquired from U.S. Geological Survey data; therefore, some features may not align exactly with base imagery.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

SCALE 1:24000

KILOMETERS

FEET

MILES

NORTH

QUADRANGLE LOCATION

1	2	3
4		5
6	7	8

1 HAMILTON
2 CALEDONIA
3 MILLPORT NW
4 COLUMBUS NORTH
5 FERNBANK
6 COLUMBUS SOUTH
7 NEW HOPE
8 ETHELSVILLE

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UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

PICKENS COUNTY, ALABAMA
WARSAW QUADRANGLE
SHEET NUMBER 26 OF 26

(Joins sheet 22, Aliceville South)

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1992 aerial photography. Hydrography and culture information were acquired from U.S. Geological Survey data; therefore, some features may not align exactly with base imagery.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

KILOMETERS 1 0 1

FEET 1000 0 1000 2000 3000 4000 5000 6000 7000

MILES 1 0 1

1	2	3
4		5
6	7	8

1 DANCY
2 ALICEVILLE SOUTH
3 PLEASANT RIDGE
4 PANOLA
5 WEST GREENE
6 GEIGER
7 GAINESVILLE
8 BOLIGEE

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